

National Emission Standards For Hazardous Air Pollutants
(NESHAP) for the Printing and Publishing Industry -
Background Information for Promulgated Standards

Emission Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

May 1996

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U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Background Information
and Final
Environmental Impact Statement
for Hazardous Air Pollutant Emissions
From the Printing and Publishing Industry

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(Date)

1. The promulgated standards of performance would reduce hazardous air pollutants (HAP) emissions from existing and new rotogravure and wide-web flexographic printing facilities that are major sources of HAP emissions. Under Section 112 of the Clean Air Act (CAA), as amended in 1990, the EPA is authorized to require the maximum degree of reduction in emissions of hazardous air pollutants that is achievable, taking into consideration the cost of achieving such emission reductions, and any nonair quality health and environmental impacts and energy requirements.
2. Copies of this document have been sent to the following Federal Departments: Labor, Health and Human Services, Defense, Transportation, Agriculture, Commerce, Interior, and Energy; the National Science Foundation; the Council on Environmental Quality; members of the State and Territorial Air Pollution Program Administrators; the Association of Local Air Pollution Control Offices; EPA Regional Administrators; and other interested parties.
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1. SUMMARY

On March 14, 1995, the EPA proposed national emission standards for hazardous air pollutants (NESHAP) for rotogravure and wide-web flexographic printing (60 FR 13664) under authority of Section 112 of the amended CAA. Public comments were requested on the proposal in the Federal Register. One hundred seventeen commenters, composed of State and local air pollution control agencies; trade associations for printers; ink manufacturers and control equipment manufacturers; printers; ink manufacturers; and citizens responded to the request.

The comments that were submitted and the responses to those comments are summarized in this document. The summary of comments and responses serves as the basis for the revisions made to the standards between proposal and promulgation.

1.1 SUMMARY OF CHANGES MADE SINCE PROPOSAL

Several changes have been made since the proposal of these standards. A discussion of these changes is provided in the preamble to the final rule. A summary of the major changes is presented below.

1.1.1 Incidental Printing and Ancillary Printing Equipment

The final standard includes simplified requirements and does not mandate emission controls for incidental printers. Incidental printers are a subgroup of product and packaging rotogravure or wide-web flexographic printing affected sources at facilities that are major sources of HAP. Affected sources within this subgroup are those which meet a monthly threshold in either materials applied or organic HAP applied on product and packaging rotogravure and wide-web flexographic printing presses. Such affected sources would be subject only to initial notification requirements and recordkeeping requirements to show that one of the thresholds is met every month. If, in any month, such an affected source meets neither of the thresholds, then the affected source would become subject to all relevant requirements

of the final standard and would no longer qualify for inclusion in the subgroup even if, in subsequent months, the affected source did meet either of the thresholds.

The final standard also permits the owner or operator of a product and packaging rotogravure or wide-web flexographic printing affected source to choose to exclude ancillary printing equipment from the affected source. This equipment is used primarily for coating, laminating, or other operations besides product and packaging rotogravure and wide-web flexographic printing. Presses on which five weight-percent or less of the total material applied each month is applied by rotogravure or wide-web flexographic print stations would be subject only to a simplified recordkeeping requirement. The EPA believes it is appropriate to provide the owner or operator with the option not to subject these presses to the HAP emission limitations for product and packaging and wide-web flexographic printing in §63.825 because the work being done on the rotogravure and wide-web flexographic print stations on these presses is ancillary to the work being done on other work stations (i.e., coating stations) on these presses. The EPA is separately establishing maximum achievable control technology (MACT) for other source categories, such as the paper and other web coating source category and the metal coil coating source category, which may be more appropriate for this type of equipment. Ancillary printing equipment, if excluded from this standard, will be subject to the appropriate source category standard when such a standard is issued.

1.1.2 Research and Laboratory Equipment

All research and laboratory equipment has been excluded from the final standard whether or not it is collocated with production facilities.

1.1.3 Addition of Presses to Existing Affected Sources

Addition of presses to existing affected sources will subject the affected source to the compliance deadline for new sources if the additional press or presses constitutes a reconstruction of the source. Additions, replacements, and modifications to existing sources which do not meet the definition of reconstruction do not alter the compliance deadline.

1.1.4 Affected Source for Product and Packaging Rotogravure and Wide-web Flexographic Printing Facilities

The final standard considers all product and packaging rotogravure and wide-web flexographic printing equipment at a given facility as a single affected source. Compliance with reporting and recordkeeping requirements for a single affected source will be less burdensome than compliance on a press-by-press basis. In addition, sources may achieve the required emissions reductions through affected source-wide limitation of emissions, including controlled and uncontrolled presses. This will allow sources to comply in the most cost-effective way and will not require expensive control equipment for small presses which emit relatively small amounts of organic HAP if equivalent emissions reductions can be achieved elsewhere within the affected source.

1.1.5 Organic HAP Analysis Methods

The final standard adopts Method 311, as revised and promulgated with the wood furniture NESHAP, for organic HAP analysis. Printers and ink manufacturers have the option of relying on formulation data if the data meet specified criteria. In the event of any discrepancy between formulation data and the results of Method 311, the results of Method 311 shall be presumed to govern for all compliance purposes.

In addition, the printer may determine the volatile matter content of the material and use this value for the organic HAP content for all compliance purposes. This option may be useful

if organic HAP makes up all or substantially all of the volatile matter in an ink or other material.

1.1.6 Volatile Matter Analysis Methods

The final standard allows printers and ink manufacturers the option of relying on formulation data for volatile matter and solids contents, in lieu of EPA Methods 24 and 24A. In the event of any discrepancy between formulation data and the results of the EPA test methods, the test methods shall be presumed to govern for all compliance purposes.

1.1.7 Compliance Monitoring for Catalytic Oxidizers

The final standard requires owners or operators using a catalytic oxidizer and monitoring an operating parameter to ensure compliance with the standard to monitor the temperature immediately upstream of the catalyst bed. The requirement to monitor the temperature downstream of the catalyst bed has been eliminated. Since the operating parameters are established during a test under normal operating conditions, a downstream temperature monitoring parameter might be impossible to meet during periods when organic loading to the oxidizer was lower than normal. This might have led to exceedances which were not indicative of improper operating conditions or excessive emissions.

1.1.8 Additional Compliance Options for Product and Packaging Rotogravure and Wide-web Flexographic Printing Affected Sources

In order to make the compliance options for low organic HAP materials based on organic HAP content and solids applied consistent with the definition of affected source, additional means of demonstrating compliance have been added to the final rule. Affected sources may demonstrate that each material applied meets either of the organic HAP thresholds, or that all materials on average meet either of the organic HAP thresholds, or that the organic HAP emitted is less than the organic HAP allowed taking these thresholds into account. In addition,

emissions from controlled and uncontrolled presses are aggregated to determine compliance with an organic HAP emission standard applicable to the entire affected source.

1.1.9 Capture Efficiency Protocols and Test Methods

The final rule allows the use of alternate capture efficiency protocols and test methods which satisfy the criteria of either the Data Quality Objective or Lower Confidence Limit approaches. An appendix describing these approaches has been added to the final rule. Additional information on alternate capture efficiency protocols and test methods is available in Guidelines for Determining Capture Efficiency, January 1995. This document is attached to Item No. II-B-3 in the project docket.

1.1.10 Transition from Area Source to Major Source Status

A provision has been added to the final rule by which owners or operators that have used the provisions of §63.820(a)(2) to establish the facility as an area source may reestablish the facility as a major source. Such a source must comply with its HAP usage commitments until it meets all requirements for major sources.

1.1.11 Definition of "Month"

The definition of "month" in the final rule has been changed to include prespecified periods of 28 to 35 days.

1.1.12 Alternatives to Vent Stream Flow Rate Monitoring

The final regulation includes alternatives to the vent stream flow rate measurement requirement.

Owners or operators of product and packaging rotogravure or wide-web flexographic presses with intermittently-controllable work stations may, as alternatives to measuring vent stream flow rate, install flow indicators on the bypass lines, secure bypass line valves with locking mechanisms or car seals, continuously monitor bypass valve position or equip the press with an interlock preventing operation when the control device is

bypassed. Sampling lines for gas analyzers and relief valves needed for safety purposes are not considered bypass lines for the purposes of these provisions. Presses that do not have any intermittently-controllable work stations are not subject to these provisions.

1.1.13 Extension of Deadline for Initial Notification

The final rule overrides the General Provisions and requires initial notification for existing sources no later than one year before the compliance date. This will allow existing sources two years from the date of promulgation of this standard. The EPA believes that this will provide adequate notice to ensure compliance.

1.1.14 Provisions for Optional Inclusion of Stand-alone Coating Equipment

The final rule provides a mechanism by which product and packaging rotogravure and wide-web flexographic printers may include stand-alone coating equipment in their affected source. This inclusion is optional and subject to certain eligibility criteria. Coating equipment may be covered by standards for other source categories (e.g., Paper and Other Web Coating) which will be promulgated in the future. In order to avoid the additional effort required to comply with two (or more) separate MACT standards, owners or operators of printing affected sources may choose to subject this equipment to regulation under the printing and publishing standard.

Stand-alone coating equipment is eligible for inclusion if (1) it coats the same substrate as a rotogravure or wide-web flexographic press included in the affected source, or (2) it applies a solids-containing material in common with a rotogravure or wide-web flexographic press included in the affected source, or, (3) it shares a control device with a rotogravure or wide-web flexographic press included in the affected source. In order to take advantage of this provision, all eligible stand-alone

coating equipment within the facility must be included and no product or packaging rotogravure or wide-web flexographic presses may be excluded from the affected source using the mechanism in §63.821(a)(2)(ii).

1.2 SUMMARY OF IMPACTS OF PROMULGATED ACTION

The final rule will reduce nationwide emissions of HAP by approximately 6700 megagrams per year (mg/yr)(7400 tons per year (tpy)). This will result from a reduction of approximately 4,750 mg/yr (5,220 tpy) from publication rotogravure facilities and an additional 1,940 mg/yr (2,140 tpy) from product and package rotogravure and wide-web flexographic printers. Substantial reductions in emissions of volatile organic compounds (VOC) are also expected as a result of this rule. The VOC reductions may be slightly greater than the HAP reductions if affected sources convert from HAP containing solvent-based materials to waterborne or radiation cured materials. Alternately, the VOC reductions may be slightly less than the HAP reductions if affected sources convert from HAP containing solvent-based materials to reduced HAP solvent-based materials in lieu of upgrading capture and control systems.

The nationwide annual costs (including capital recovery) of the final rule are estimated at \$40 million per year. These costs include \$21 million per year for publication rotogravure printers and \$19 million per year for package and product rotogravure and wide-web flexographic printers. Cost estimates for publication rotogravure printers remain unchanged from the proposed rule. Estimated costs for package and product rotogravure and wide-web flexographic printers are slightly less than those for the proposed rule due to reductions in cost as a result of facility-wide definition of affected source. The proposed rule was determined not to have a significant economic impact. No firms or facilities were found to be at risk of closure as a result of the standards and there was not a significant economic impact on

a substantial number of small entities. Because compliance costs and reporting and recordkeeping burdens have been reduced in the final rule, the economic impact has not increased and remains insignificant.

No significant secondary environmental impacts are expected to occur as a result of this rule. The rule encourages conversion of HAP based ink systems to ink systems based on non-HAP substitutes. To the extent that printers adopt waterborne ink systems, some reduction in the production of Resource Conservation and Recovery Act regulated hazardous waste, and some increase in discharges of wastewater to publicly owned treatment plants may occur.

A net increase in consumption of electricity is expected to occur as a result of increased fan horsepower requirements in systems which are retrofit to improve capture efficiency. Individual facilities that choose to comply through partial or complete elimination of solvent borne ink systems in favor of waterborne or radiation cure ink systems will use less electricity. Because it is impossible to predict the extent to which various compliance strategies (i.e., improved capture and control, conversion to non-HAP solvent-borne materials, or conversion to waterborne or radiation cure materials), the net impact of the rule on electricity consumption has not been estimated.

2. SUMMARY OF PUBLIC COMMENTS

A total of 117 letters commenting on the proposed standard were received. A list of commenters, their affiliations, and the EPA docket item number assigned to their correspondence are given in Table 2-1. The comments have been categorized under the following topics:

1. Synthetic Area Source Mechanism
2. Definition of Major Source
3. Transition from Area Source to Major Source
4. Once in/Always in
5. Research and Laboratory Operations
6. New Source MACT
7. Affected Source at Publication Facilities
8. Affected Source at Product and Packaging Rotogravure and Wide-Web Flexographic Printing Facilities
9. Definitions
10. Reporting
11. Level of Control for Product and Packaging Rotogravure and Wide-Web Flexographic Printing Affected Sources
12. Level of Control for Publication Affected Sources
13. Standards for Product and Packaging Rotogravure and Wide-Web Flexographic Printing Affected Sources
14. Compliance for Publication Rotogravure Affected Sources
15. Monitoring
16. Compliance Dates for New sources
17. Compliance Dates-General Issues
18. HAP Content determination
19. Method 24/24A
20. Oxidizer Terminology
21. Compliance Demonstration-General Issues
22. Compliance Demonstration for Catalytic Oxidizers
23. Compliance Demonstration for Capture Efficiency
24. Startup/shutdown Issues

25. Recordkeeping
26. Printing/Coating Issues
27. Standard for Litho and Heatset Printing
28. Units
29. Glycol ethers
30. Summary Table in Regulation
31. General Provisions Cross Reference Table
32. Validity of Cost Analysis
33. Interchangeability
34. State Air Toxics Programs
35. Alternate Test Methods
36. Work Practice Standards
37. Innovative Technologies
38. Due Process
39. Exemption for Newly Listed HAP
40. Feasibility of Materials Substitution

TABLE 2-1. LIST OF COMMENTERS ON NATIONAL EMISSION STANDARDS
FOR THE PRINTING AND PUBLISHING INDUSTRY

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-1	T. A. Lored, Reynolds Metals Company, Flexible Packaging Division
IV-D-2	E. W. Siemering, Federal Paper Board Company
IV-D-3	C. Whisenant, Shamrock Corporation
IV-D-4	F. Shapiro, PF Technical Services
IV-D-5	V. W. Ducker, Ecusta
IV-D-6	D. P. Sankot, Color Converting Industries
IV-D-7	D. L. McKinnon, Manufacturers of Emissions Controls Association
IV-D-8	A. M. Friedman, Starlight Flexible Packaging
IV-D-9	Unsigned
IV-D-10	M. L. Ashenbrenner, Little Rapids Corporation
IV-D-11	M. A. Schilling, TUFCO Industries, Incorporated
IV-D-12	D. Sullivan, Fox Converting, Incorporated
IV-D-13	M. Prabhu, Solar Press, Incorporated
IV-D-14	D. R. Pendleton, Texas Natural Resource Conservation Commission
IV-D-15	R. Dennison, Gravure Association of America
IV-D-16	K. S. Barnett, Aluminum Corporation of America
IV-D-17	T. A. Lored, Reynolds Metals Company, Flexible Packaging Division
IV-D-18	D. A. Jurewicz, Stone Container Corporation
IV-D-19	P. R. Addison, Print Flex, Incorporated

IV-D-20

Illegible signature

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-21	J. H. Sutphin, National Association of Printing Ink Manufacturers, Incorporated
IV-D-22	Illegible signature, M & D Industries International, Incorporated
IV-D-23	F. G. Christeson, DE'COR Gravure Corporation
IV-D-24	J. McGill, Interflex Group
IV-D-25	T. Warlick, Graphic Packaging Corporation
IV-D-26	K. Lee, Shorewood Packaging
IV-D-27	R. Bronstein, U. S. Converting, Incorporated
IV-D-28	K. Flackam, INX International, Incorporated
IV-D-29	R. E. Heskett, Bemis Company, Incorporated
IV-D-30	Illegible signature, Squareshooter Candy Company
IV-D-31	S. Shaw, Bema Film Systems, Incorporated
IV-D-32	R. Kline, Graphic Packaging Corporation
IV-D-33	R. H. Miller, James River Corporation
IV-D-34	G. A. Morris, Sandusky Vinyl Products Corporation
IV-D-35	G. J. Sullivan, Little Falls Color-Print
IV-D-36	M. G. Wygonik, Flexible Packaging Association
IV-D-37	N. Zlotkin, Air Pollution Control District, County of San Diego
IV-D-38	R. H. Colby and D. F. Theiler, STAPPA/ALAPCO, State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in</u> <u>Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-39	R. D. Fletcher, State of California, California Environmental Protection Agency

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-40	W. E. Bachman, GenCorp
IV-D-41	C. Martin, Plas-Techs, Incorporated
IV-D-42	C. Yedinak, Northstar Print Group
IV-D-43	F. Jelalian, Accutech International
IV-D-44	D. Redding, Duralam, Incorporated
IV-D-45	Illegible signature, Waterlox Coatings Corporation
IV-D-46	Illegible signature
IV-D-47	Illegible signature, Formel Industries, Incorporated
IV-D-48	G. T. McCarter, Fres-co System USA, Incorporated
IV-D-49	C. Twaroski, Minnesota Pollution Control Agency
IV-D-50	R. D. Robinson, Borden, Incorporated
IV-D-51	J. E. Walther and S. H. Maurer, James River Corporation
IV-D-52	K. Orsborne, Flint Ink Corporation
IV-D-53	D. G. Ellison, American National Can Company
IV-D-54	L. J. Liszewski, Eastman Kodak Company
IV-D-55	Illegible signature, Prestige-Pak, Incorporated
IV-D-56	M. J. Wax, Institute of Clean Air Companies
IV-D-57	J. R. Schrader, Printworld, Division of Technographics, Incorporated
IV-D-58	Illegible signature, Zorn Packaging, Incorporated

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in</u> <u>Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-59	D. Roeing, Croda Inks Corporation
IV-D-60	J. L. Murphy, Westvaco

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-61	D. Wefring, 3M Environmental Engineering and Pollution Control
IV-D-62	L. A. Spurlock, Chemical Manufacturers Association
IV-D-63	D. W. Marshall, Union Camp Corporation
IV-D-64	J. Kraemer
IV-D-65	L. Gallins, Halsted Corporation
IV-D-66	T. A. Elliott, Zeneca, Incorporated
IV-D-67	H. E. Coffey, Westvaco
IV-D-68	Two illegible signatures, Walden Paper Services, Incorporated
IV-D-69	L. H. Goldstein, Colonial Transparent Products Company, Incorporated
IV-D-70	W. A. Riessen, B & D Plastics, Incorporated
IV-D-70A	L. G. Gwin, Julian B. Slevin Company
IV-D-71	R. Creighton, Package-Craft, Incorporated
IV-D-72	Illegible signature, Northern Expediting Corporation
IV-D-73	T. H. Jones, Precision Packaging, Incorporated
IV-D-74	Illegible signature, Graphic Creation Stationery & School Supply, Incorporated
IV-D-75	Illegible signature, Ohio Valley Converting, Limited
IV-D-76	S. G. Mushall, Mannington
IV-D-77	H. Michail, Magruder Color Company

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in</u> <u>Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-78	Illegible signature, Lally-Pak, Incorporated

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-79	M. Feldstein, Bay Area Air Quality Management District
IV-D-80	J. L. Shumaker, International Paper
IV-D-81	J. A. Dege, DuPont SHE Excellence Center
IV-D-82	K. Z. Klaber, Environmental Resources Management, Incorporated
IV-D-83	D. M. Gorewitz, Longview Fibre Company
IV-D-84	M. E. Ward, R. J. Reynolds Tobacco Company
IV-D-85	R. C. Barnard, Fonda Group, Incorporated
IV-D-86	D. Chaffee, Sancoa International
IV-D-87	J. M. Daley
IV-D-88	J. P. Leyden, South Coast Air Quality Management District
IV-D-89	Illegible signature, Package Printing Company, Incorporated
IV-D-90	R. C. Rhodes, Universal Packaging Corporation
IV-D-91	G. Kaufman, Manhattan Poly Bag Corporation
IV-D-92	J. D. Eichenlaub, Trinity Packaging Corporation
IV-D-93	B. V. Trave, Bemis Company, Incorporated
IV-D-94	R. Bennett, Ultra-Creative Corporation
IV-D-95	R. A. Knowles, Huntsman Packaging Corporation
IV-D-96	G. T. Richards, Vitex Packaging, Incorporated
IV-D-97	D. Larson, Bemis Company, Incorporated

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in</u> <u>Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-98	D. C. Cook, Printpak, Incorporated

TABLE 2-1. LIST OF COMMENTERS ON THE PROPOSED NESHAP FOR
THE PRINTING AND PUBLISHING INDUSTRY (CONTINUED)

<u>Item Number in Docket A-92-42</u>	<u>Commenter and Affiliation</u>
IV-D-99	T. Sattis, Graphic Packaging Corporation
IV-D-100	T. Salo, Apple Converting
IV-D-101	L. Cowert, Dixie Packaging, Incorporated
IV-D-102	L. Pietroski, Berwick Industries, Incorporated
IV-D-103	Illegible signature, Metropolitan Packaging Manufacturing Corporation
IV-D-104	J. P. Duhig, Fortune Plastics, Incorporated
IV-D-105	E. Jones, International Converter, Incorporated
IV-D-106	T. Tellez, Poly-Pak Industries, Incorporated
IV-D-107	Illegible signature
IV-D-108	S. A. Moyer
IV-D-109	L. McClure, Bemis Company, Incorporated
IV-D-110	H. Rothchild, Poly Plastic Packaging Company, Incorporated
IV-D-111	A. Kuehl, Olympic Packaging, Incorporated
IV-D-112	T. A. Augurt, Propper Manufacturing Company, Incorporated
IV-D-113	B. L. Olsen, RollPrint Packaging Products, Incorporated
IV-D-114	Illegible signature, Fabri-con Products
IV-D-115	Illegible signature, Union Industries
IV-D-116	S. Castellan, Graphic Packaging Corporation

2.1 SYNTHETIC AREA SOURCE MECHANISM

Comment: A number of comments were received suggesting simplified mechanisms for establishing synthetic area source status. Three commenters recommended strategies involving state operating permits. Commenter IV-D-36 suggested accepting emissions limitations under "Federally Exempt State Permits." Commenter IV-D-63 suggested grandfathering facilities which presently have state operating permits which incorporate HAP emission limits. Commenters IV-D-49 and IV-D-63 suggested allowing case-by-case operating restrictions within State permits.

Seven commenters suggested specific mechanisms to establish area source status. Commenter IV-D-14 suggested that sources determine emissions using initial capture and control device test data in conjunction with actual ink usage rates and HAP contents. If oxidizers were used, continuous temperature monitoring would be required. The sources would maintain monthly records of calculated emission rates and provide an annual self-certified report. If physical limitations prevented a source from emitting at threshold levels (presumably a source so small or so slow that it could never use threshold levels of HAP) then a onetime certification would suffice. Commenter IV-D-53 suggested the use of capture and control device test data and formulation data to establish that emissions were 90 percent or less of the 10/25 threshold. Sources would be required to maintain records to demonstrate this on a twelve month rolling average basis. Commenter IV-D-98 suggested having the source report actual emissions (taking into account documented capture and control efficiencies) to the permitting authority on a quarterly basis.

Commenter IV-D-80 suggested calculating actual emissions based on overall control efficiency testing and then requiring monitoring, recordkeeping, and reporting only with respect to

conformity with an operating and maintenance plan for the control equipment.

Commenter IV-D-39 suggested that major sources that establish the existence of control devices which limit emissions to below threshold amounts be treated in accordance with the John Seitz memoranda of 1/25/95 and 5/16/95; and that these sources not be required to maintain a Title V permit.

Commenter IV-D-79 suggested a simplified cutoff based on quantity of materials used (e.g., 250 gallons per month, as in wood furniture); the commitment procedure could take the form of a signed statement submitted before the final compliance date. Very small facilities (2 tons/5 tons) could demonstrate compliance on request of the regulatory authority without any commitment. Commenter IV-D-18 suggested using the Superfund Amendments and Reorganization Act (SARA) 313 annual recordkeeping and reporting to establish emissions below the 10/25 threshold.

Two commenters (IV-D-39 and IV-D-53) suggested excluding area sources from a requirement for a Part 70 permit. Commenter IV-D-53 requested explicit language that §63.821(d) of the proposed rule applies only to major sources.

Response: The synthetic area source mechanism in §63.820 has been retained. This is not intended to preclude the use of other mechanisms based on Federally enforceable limitations on potential-to-emit. These mechanisms are described in the response included in section 2.2 below. As described below, major source status is not determined by actual HAP emissions or actual HAP use. Any limitations on potential-to-emit must be physical (e.g., size, capacity, speed, materials compatibility) or Federally enforceable commitments (or certain State-enforceable commitments which are practically effective). Additional information is provided in the EPA's "Interim Policy of Federal Enforceability of Limitations on Potential to Emit" (Docket Item IV-B-2).

Provisions by which sources can establish area source status based on the use of control devices have not been added to the rule. Major source status is determined by facility-wide potential-to-emit. The use of control equipment to control emissions from affected sources under this rule might not ensure area source status because of potential emissions from collocated affected sources subject to other source categories. In making and demonstrating compliance with area source commitments outside of this rule for facilities with controlled printing presses, the procedures in this rule for determining HAP content, capture efficiency, control device efficiency, monitoring and recordkeeping may be useful in limiting the potential to emit from the controlled printing presses.

Simplified requirements have been added to the final standard for incidental printers. These are major sources which operate product and packaging and wide-web flexographic printing presses that apply relatively small amounts of material or apply relatively small quantities of HAP. Sources which apply no more than 500 kilograms (kg) per month of materials on product and packaging rotogravure and wide-web flexographic printing presses, or no more than 400 kg per month of organic HAP on product and packaging rotogravure and wide-web flexographic printing presses are subject only to greatly simplified recordkeeping requirements.

In addition, owners or operators of ancillary printing equipment may exclude this equipment from the affected source. Ancillary printing equipment is equipment which is used primarily for coating, laminating, or printing by processes other than product and packaging rotogravure and wide-web flexographic printing. Presses on which five weight-percent or less of the total material applied each month is applied by rotogravure or wide-web flexographic print stations would be subject only to a simplified recordkeeping requirement.

The requirement to apply for and obtain a Part 70 permit is not exclusively based on Title III (HAP). Other pollutants, at levels which vary by location, and requirements of State implementation plans also affect Part 70 permit requirements. The area source provisions within the rule do not obligate the source to obtain a Part 70 permit, nor do they exempt the source from other requirements to which it is subject. Consistent with the EPA's December 1995 proposal to amend the NESHAP for Chromium Electroplating, nonmajor sources are not required to obtain Title V operating permits.

2.2 DEFINITION OF MAJOR SOURCE

Comment: Seven commenters (IV-D-1, IV-D-15, IV-D-36, IV-D-51, IV-D-53, IV-D-63, IV-D-79, and IV-D-84) suggested basing major source status on HAP emissions as opposed to HAP use. Five of the seven (IV-D-1, IV-D-36, IV-D-53, IV-D-63, and IV-D-84) further suggested that major source status should be based on organic HAP use, as inorganic HAP are not regulated under the proposed standard. Commenter IV-D-36 specifically recommended exclusion of organic HAP which is not emitted (such as dibutylphthalate) from the determination of major source status.

Commenters IV-D-38 and IV-D-51 suggested exempting small printing operations located at facilities that are major sources as a result of other operations. Commenter IV-D-51 suggested establishing a de minimis quantity of HAP use for these operations, or alternately allowing the source to commit to a 5/10 threshold based on HAP use and confirm this by maintaining material safety data sheets (MSDS) and records of materials used.

Response: Major source status is determined based on "potential-to-emit" as defined in the General Provisions, §63.2, as opposed to actual emissions or HAP usage for any particular year. Potential-to-emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the

capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is Federally enforceable.

Federally enforceable limits on potential-to-emit can be obtained through new source review permits, permits issued under State operating permit programs adopted in State implementation plans and approved by the EPA (extended to HAP), Title V operating permits, State implementation plan limits for individual sources, Section 112(l) State HAP programs, or State-created protocols included in a Section 112(l) provision. Other mechanisms may also be available.

Nonvolatile materials, including many metallic compounds, may not be capable of being emitted as air pollutants. Use of materials which have no potential for emission to the air do not affect major source status. However, the definition of "hazardous air pollutant" in §112(b) of the CAA (including all inorganic HAP) is the basis for making major source determinations if the facility has the potential to emit such pollutants (even if they are not controlled by this standard).

The CAA defines "major source" to mean "any stationary source or group of stationary sources [emphasis added] located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, [emphasis added] 10 tpy or more of any hazardous air pollutant or 25 tpy or more of any combination of hazardous air pollutants." The EPA interprets this to allow aggregation of sources across source categories at a facility in determining major source status.

Simplified provisions have been added to the final rule for incidental printers. These are small printing operations located

at facilities which are major sources principally as a result of other operations. These sources are subject only to simplified recordkeeping requirements.

2.3 TRANSITION FROM AREA SOURCE TO MAJOR SOURCE

Comment: Commenter IV-D-15 requested that a provision allowing a transition period for a newly designated major source to come into compliance be incorporated in the rule. The proposal makes no allowance for a source to make this transition without being in violation of the standard.

Response: The owner or operator of an area source intending to increase the capacity of the facility to the extent that it would become a major source is required to apply for and obtain a Title V permit. The owner or operator of an area source seeking to remove a provision limiting potential-to-emit from the source's Title V permit must apply for and obtain a permit modification. Any new area source that becomes a major affected source must comply with the standard upon becoming a major source. Any existing area source that becomes a major affected source must comply with the standard by the existing source compliance date or upon becoming a major source, whichever is later.

A provision has been added to the final rule in §63.820(a)(6) which provides a mechanism for owners or operators that have used the provisions of §63.820(a)(2) to establish the facility as an area source to reestablish the facility as a major source. Such a source must continue to comply with its HAP usage commitments until it meets all requirements for major sources.

2.4 ONCE IN/ALWAYS IN

Comment: Commenters IV-D-14 and IV-D-15 stated that this policy eliminates an incentive for companies to reduce HAP emissions. Three commenters (IV-D-14, IV-D-49 and IV-D-84) requested the inclusion of a provision for major sources to alter their operations and become area sources. Commenter IV-D-14

recommend a mechanism for attaining synthetic area source status through documentation of monthly records of emission rates and an annual report. If physical modifications are made to eliminate the possibility of major source level emissions, a onetime certification is suggested. Commenters IV-D-49 and IV-D-84 request some mechanism to attain synthetic area source status after eliminating HAP use or reducing HAP use below a de minimis level.

Commenters IV-D-36 and IV-D-53 request a provision for retaining area source status after a violation of the commitment. Commenter IV-D-84 suggested an appeal process whereby facilities with onetime exceedances can maintain area source status.

Response: The EPA believes that the "once in, always in" policy follows most naturally from the language and structure of the CAA. In many cases, application of maximum achievable control technology (MACT) will reduce a major emitter's emissions to levels substantially below the major source thresholds. Without a "once in, always in" policy, these facilities could "backslide" from MACT control levels by obtaining potential-to-emit limits, escaping applicability of the MACT standard, and increasing emissions to the major source threshold (10/25 tpy). Thus, the maximum achievable emissions reductions that Congress mandated for major sources would not be achieved. A "once in, always in" policy ensures that the MACT emission reductions are permanent, and that the health and environmental protection provided by MACT standards is not undermined.

This issue was addressed in a May 16, 1995 memo "Potential to Emit for MACT Standards--Guidance on Timing Issues" from John Seitz, Director of the Office of Air Quality Planning and Standards, to the directors of Regions I through X (Docket Item IV-B-2), and further discussed in the Background Information Document (BID) for the promulgated NESHAP for Wood Furniture Manufacturing Operations (EPA-453/R-95-018b).

2.5 RESEARCH AND LABORATORY OPERATIONS

Comment: Eight comments were received requesting varying degrees of exemption for research and laboratory equipment. Five commenters (IV-D-15, IV-D-36, IV-D-61, IV-D-63, IV-D-80, and IV-D-84) suggested exempting all research and development activities from the standard. Commenter IV-D-80 stated that the purpose and operation of a research press is independent of its location. Commenter IV-D-63 suggested exempting research and development activities which are collocated with production; these are the only research and development activities expected to be affected by the proposed rule. Commenter IV-D-61 suggested exempting all research and laboratory operations and covering these operations with a separate standard.

Commenter IV-D-1 suggested exempting laboratories collocated at production facilities if they are located in separate buildings. The same individual recommended in a separate comment (IV-D-17) exempting all research and laboratory facilities whose primary purpose is research and development of new processes and products.

Two comments were received on research work conducted on production presses. Commenter IV-D-63 suggested exempting research and development on production presses if it was done in non-marketable quantities. Commenter IV-D-82 suggested that trial runs of less than production quantity (presumably conducted on production equipment) should be exempt and that a de minimis in terms of press size, hours of operation, or maximum emissions should be specified.

Response: The final rule excludes research and laboratory equipment. As the commenter suggested, in order to regulate research and laboratory equipment, it would be necessary to develop a separate source category as directed by Section 112(c)(7) of the CAA to assure equitable treatment of such equipment. Furthermore, the EPA believes that many of the

types of emission points associated with research and laboratory equipment (such as laboratory bench-scale equipment) may not be feasibly controlled using the same control devices as are used for production equipment because they may be small, intermittent, remote from production equipment or incompatible with materials used in the production process.

2.6 NEW SOURCE MACT

Comment: One commenter IV-D-49 suggested that the EPA consider establishing separate new source MACT standards.

Response: The EPA believes that the standard for existing publication rotogravure facilities, 92 percent overall control on a facility-wide basis to be achieved each and every month, will require an efficient capture system and a state-of-the-art control device. This level of control is the MACT floor for both existing and new sources. There is no distinct identifiable technology available to new sources that would allow them to achieve a more stringent standard.

The EPA believes that the overall efficiency standard for existing package and product facilities, 95 percent overall control on a facility wide basis to be demonstrated under performance test conditions, will require an efficient capture system and a state-of-the-art control device. This level of control is the MACT floor for both existing and new sources. There is no distinct identifiable technology available to new sources that would allow them to achieve a more stringent standard. Because of the wide variation in performance requirements of printed substrates, there is no assurance that all new facilities would be able to meet a more stringent standard through the use of low-HAP materials.

2.7 AFFECTED SOURCE AT PUBLICATION FACILITIES

Comment: Commenter IV-D-15 suggested explicitly clarifying that the affected source for the publication rotogravure standard is the entire facility (not individual presses or operations) and

that the standard be restricted to gravure related operations using organic HAP.

Response: The definition of the affected source in §63.821(a)(1) includes all rotogravure presses and all affiliated equipment within a facility. Plating of rotogravure cylinders is covered by a separate NESHAP in subpart N, and is not regulated under this standard.

2.8 AFFECTED SOURCE AT PRODUCT AND PACKAGING ROTOGRAVURE AND WIDE-WEB FLEXOGRAPHIC PRINTING FACILITIES

Comment: Four commenters (IV-D-36, IV-D-51, IV-D-53, and IV-D-88) suggested allowing compliance based on the entire facility rather than line-by-line. Commenter IV-D-36 suggested this only with regard to averaging materials to meet the low-HAP threshold, and stated that it would cut recordkeeping expenses from \$250,000 per year to \$20,000. Commenter IV-D-53 also stated that this would reduce recordkeeping expenses.

Eight commenters (IV-D-1, IV-D-15, IV-D-36, IV-D-51, IV-D-53, IV-D-63, IV-D-82, IV-D-84) suggested allowing grouping and averaging for all presses controlled by any common control device rather than only solvent recovery systems.

Two commenters (IV-D-17 and IV-D-36) suggested allowing individual stations or any groups of stations on the same press to comply on an individual or group basis with any standard. Various parts of the same press could comply on the basis of the low-HAP threshold, the low solids threshold or the HAP emissions threshold. Station by station inventories of materials used would be maintained.

Commenter IV-D-51 suggested relaxing the qualifications for group compliance applicable to groups of presses controlled by a common solvent recovery system. The commenter suggested dropping the requirement that common solvent recovery systems be used only for control of printing operations so as not to penalize

facilities that have tightened up their control systems by tying in other sources of HAP.

Commenter IV-D-38 suggested including cylinder and parts cleaners, ink and solvent mixing, and solvent recovery equipment at product and packaging facilities to make it consistent with the operations covered at publication rotogravure facilities.

Five commenters requested restrictions on the applicability of the standard and one commenter requested clarifying the applicability. Two commenters (IV-D-36 and IV-D-51) suggest restricting applicability to sources using organic HAP.

Commenter IV-D-54 suggested adding language to §63.821 exempting sources that do not use HAP even if they are collocated with other non-printing operations that are major sources.

Commenter 81 suggested excluding rotogravure equipment located at facilities with non-printing standard industrial classification (SIC) codes, such as chemical plants, and regulating them when the appropriate chemical process plant MACT is issued.

Commenter IV-D-82 requested an exemption for (undefined) small presses collocated with large presses as these will be expensive to control and will yield little emission reduction.

Commenter IV-D-39 requested explicit clarification that presses collocated at major sources are affected sources under the standard.

Commenter IV-D-63 suggested correcting the error in §63.825(b) of the proposed rule to include flexographic presses. This was inadvertently omitted.

Response: The final rule defines the affected source to include all of the packaging and product rotogravure and wide-web flexographic printing presses rather than individual presses. This will reduce recordkeeping, reporting, compliance demonstration, and enforcement costs. All presses, including uncontrolled presses and controlled presses regardless of whether they share a common control system are included. The facility-

wide affected source definition is not expected to affect the overall emissions from a facility but it will eliminate the need to run particular printing jobs on particular presses as part of a facility's compliance strategy. Station-by-station compliance, grouping of stations which are part of one or more presses, and press-by-press compliance are not permitted in the final rule because facility-wide compliance encompasses these options and is more easily and more reliably demonstrated. In addition to reducing recordkeeping costs, this will reduce the labor associated with enforcement. Facilities which apply a combination of materials, all of which meet either the low-HAP/solids or the low-HAP/material thresholds, can comply with the rule without dedicating particular stations to specific types of materials. Facility-wide definition of affected source will remove the incentive for awkward and suboptimal scheduling of jobs and equipment to achieve press-by-press compliance. In addition, facilities will have an incentive to decrease HAP use where possible (beyond the emissions threshold for a particular job, press, or type of application) to achieve an emission reduction that can be used to offset emissions in areas where emission reduction is more expensive.

The final standard includes provisions by which an owner or operator of stand-alone coating equipment which is functionally related to printing equipment, may choose, under some circumstances, to include this equipment in an affected source. To be eligible for inclusion, stand-alone coating equipment must share a common control device with a rotogravure or wide-web flexographic press included in the affected source, or coat a substrate previously or subsequently printed by a rotogravure or wide-web flexographic press included in the affected source, or apply a solids-containing material which is also applied by a rotogravure or wide-web flexographic press included in the affected source. Equipment which is not functionally related to

product and packaging rotogravure printing or wide-web flexographic printing presses is more appropriately regulated under a different standard (e.g., Paper and Other Web Coating).

The EPA does not have sufficient data to determine MACT for cylinder and parts washers, proof presses, and ink and solvent mixing and storage equipment affiliated with presses at product and packaging rotogravure and wide-web flexographic printing facilities. The extremely diverse nature of this segment of the printing industry (equipment type, material type, substrate type, and product or package produced) complicates the determination of achievable control. The database for publication rotogravure facilities provided material balances over all printing related equipment.

The rule applies to affected sources located at major sources of HAP. Recordkeeping for facilities that use no organic HAP on their product and packaging rotogravure and wide-web flexographic printing presses requires minimal labor and is essential to ensure that the facilities are in fact using no HAP and that the facilities maintain information from testing or from raw material suppliers to establish this fact. Such facilities may use the provision in §63.821(b) of the final rule.

The EPA does not believe that it can determine what facilities operate printing presses using only SIC codes. Converters and product printers generally use an SIC code specific for the type of product or package that they produce. MACT for controlling organic HAP emissions from product and packaging rotogravure and wide-web flexographic presses is independent of whether or not the press or presses are collocated with a chemical plant or other potential source of HAP.

The final standard includes a facility-wide definition of affected source which will allow owners or operators to achieve facility-wide organic HAP emission reductions through installation or upgrading of capture or control equipment or by

reducing the organic HAP content of materials used on whatever press or presses that this can be most economically implemented.

Section 63.821(a)(2) of the final rule specifies that all product and packaging rotogravure or wide-web flexographic presses at a facility are subject to the standard (except for proof presses). The final rule includes wide-web flexographic presses along with product and packaging rotogravure presses in all requirements of the standard. Although this applicability was discussed in the preamble to the proposed rule, it was inadvertently omitted from the proposed standard.

2.9 DEFINITIONS

Comment: Various comments were received suggesting additional or revised definitions. In some cases the definitions which were suggested were part of suggestions for alternate regulations or clarifications.

Commenters IV-D-1 and IV-D-63 suggested separate definitions of "HAP used for publication rotogravure" and "HAP used for Package/Product rotogravure and flexography" with HAP used for package/product rotogravure and flexography defined as equivalent to "HAP applied". Commenter IV-D-53 suggested defining "HAP used" to apply only to publication rotogravure.

Commenter IV-D-15 suggested expanding the definition of month to include (unspecified) "months" other than calendar months or 28 or 35 days.

Commenter IV-D-15 suggested defining organic volatile matter as VOC, and recommended new definitions for "overall equivalent volatile organic HAP control efficiency" and "overall organic volatile matter recovery" to reflect the combination substitution/control efficiency and recovered HAP plus non-HAP solvent. Commenter IV-D-15 also recommended adding definitions for "facility" and "source."

Three comments were received suggesting definition of the term "emission unit" as part of suggested changes to the

designation of affected sources. Commenters IV-D-17 and IV-D-36 recommend defining an emission unit as a station or group of stations on a press. Commenter IV-D-63 suggested defining emission unit as a stand alone press, a press within a group of commonly controlled presses or an inboard or outboard station on a press.

Commenter IV-D-17 recommended that "HAP control efficiency" be defined and the definition include a statement that it is not expected to be different than VOC control efficiency.

Commenters IV-D-36 and IV-D-63 suggest defining "HAP emitted" to exclude materials in ink such as phthalates which are not emitted.

Commenter IV-D-49 suggested changing the capture efficiency definition to provide that HAP must reach the inlet of the control device, not just be directed towards it.

Commenter IV-D-49 suggested including a de minimis in the definition of research and development.

Commenter IV-D-54 recommended defining rotogravure printing to exclude single uniform coatings over the length and width of the substrate. Commenter IV-D-61 recommended including a definition of "off-line rotogravure coating".

Response: The definitions of HAP applied and HAP used have been clarified. The standards including the equations used to demonstrate compliance and the definitions of the variables used in those equations are expressed in terms of "HAP used" for publication rotogravure and "HAP applied" for product and package rotogravure and wide-web flexographic printing.

The definition of "month" in the final rule has been changed to include prespecified periods of 28 to 35 days.

Organic volatile matter encompasses a wider range of materials than VOC which excludes exempt solvents and is subject to change in the future. The standard has been written based on organic volatile matter. The compliance procedures, and the

equations for demonstrating compliance are consistent with the definitions of the variables used in the equations. Affected source is defined for the purposes of this standard in §63.821. A definition of facility has been added.

The standard for product and packaging rotogravure and wide-web flexographic printing includes a revised description of affected source to include all product and packaging rotogravure and wide-web flexographic presses at the facility (with certain exceptions). Facility-wide definition of affected source provides flexibility in choosing how to comply with the rule. The final standard does not provide for compliance on the basis of emission units because this is much more difficult to enforce and will result in minimal additional HAP control.

The procedures for compliance demonstration are written so as not to require a separate definition of HAP control efficiency. Equation 1 in §63.824 has been rewritten to clarify that volatile matter recovery efficiency can be assumed to be equivalent to organic HAP recovery efficiency. The extent to which phthalates and other organic HAP are retained on the printed substrate has not been established. These compounds may be emitted under some circumstances, thus they have not been excluded through a definition of HAP emitted.

In the final rule, the definition of capture efficiency has been clarified. The commenter was correct that the intent of this definition was that captured HAP must be delivered to the control device.

In the final rule, the definition of research or laboratory facility is based on the definition in Section 112(c)(7) of the CAA. The EPA does not have sufficient information that "de minimis manner" could be defined for this source category.

Definitions of "coating operation" and "stand-alone coating equipment" have been added to clarify the scope of the rule.

2.10 REPORTING

Comment: Two comments were received requesting clarification that only reports applicable to the specific control strategy employed were required. Commenter IV-D-1 suggested that the rule require only applicable reports. Commenter IV-D-15 requested explicit exemption from initial notification, performance test notification, and performance test reporting for sources complying by means of liquid-liquid mass balances.

Commenters IV-D-1 and IV-D-36 suggested synchronizing the required semi-annual reports with required Title V reporting.

Three comments were received requesting the elimination of redundant reporting requirements. Commenters IV-D-36 and IV-D-63 suggested eliminating HAP usage reporting requirements if this was already a condition of the State operating permit. Commenter IV-D-50 suggested that the requirement for an annual statement of compliance was redundant with other General Provisions requirements.

Five comments were received regarding the initial notification requirements. Commenters IV-D-37 and IV-D-39 suggested extending the notification period from 120 to 180 days because 120 days is insufficient for notification, guidance and resubmission. Commenter IV-D-79 recommended extending the initial notification period to 270 days. Commenter IV-D-53 requested language in the rule to indicate that the Title V application constitutes initial notification. Commenter IV-D-49 requested that area sources be required to submit initial notifications so that the States will know who they are and what they are doing.

Commenters IV-D-1 and IV-D-53 suggested requiring reporting of "HAP emitted" rather than "HAP used". Commenter IV-D-51 requested that sources meeting the requirements of §63.821(a)(2) of the proposed rule be allowed 60 days rather than 30 days for reporting of annual HAP usage because of delays expected as a

result of required testing methods. Commenter IV-D-54 suggested exempting affected sources that do not use HAP from all reporting other than an annual statement to this effect.

Commenter IV-D-54 suggested clarifying that only an estimate of HAP use is required for the period 12 months prior to notification, because no records will be available based on the required test methods.

Commenter IV-D-4 feels that reporting requirements should be reduced for flexographers (relative to rotogravure printers) so that the cost of reporting is in line with the expected emission reductions. Commenter IV-D-25 feels that the reporting requirements are excessive and may be in violation of the Federal Paperwork Reduction Act. Commenter IV-D-81 recommended eliminating reporting for area sources that are distinctly below the 10/25 threshold and requiring only on-site recordkeeping. Commenter IV-D-81 suggested eliminating all reporting requirements except for an annual certification. Commenter IV-D-81 suggested eliminating the requirement for documentation of deviations from the startup, shutdown, and malfunction report except when the standard is not met as a consequence of the deviation.

Commenter IV-D-88 suggested delegating the authority to require reports to the permitting authority.

Response: Reports required under §63.830(b)(6) of the revised rule are to be submitted as applicable. In accordance with §63.10(e)(3)(i) of the General Provisions, reportable excess emissions and parameter exceedances are defined in §§63.824-825 of the revised standard.

Section 63.10(a)(5) of the General Provisions applies to this standard. This section provides that the dates by which periodic reports shall be submitted can be changed to be consistent with the State's schedule (without changing the frequency of reporting) by mutual agreement between the owner or

operator and the State. Procedures governing the implementation of this provision are specified in §63.9(i) of the General Provisions.

HAP as defined under different State air toxics control programs may not coincide with HAP listed in §112(b) of the CAA, therefore HAP usage reporting requirements may not be redundant and have been retained. The requirement for an annual statement of compliance has been retained; however the standard does not preclude submission of this statement as part of, or in conjunction with, a periodic report.

Initial notification is essential for the enforcement of the standard, as it alerts permitting authorities to the presence of affected sources. Initial notification requirements for existing sources have been extended until one year before the compliance date. This will allow potential sources more time to determine whether they are subject to the standard and will have no adverse impact on HAP emissions. Conditions under which an application for a Title V permit or a Part 70 permit may be construed as initial notification are stated in the final rule. In addition, an application for approval of construction or reconstruction under §63.5(d) of the General Provisions can be used to fulfill notification requirements. The applicability of the standard and all reporting requirements, including initial notification, is limited to facilities defined in §63.820(a). Sources which use the provisions of this standard to establish area source status are required to submit initial notifications. Sources which use other mechanisms to establish area source status must comply with the conditions of those mechanisms. This standard does not limit the authority of a State to require initial notification from area sources under State laws.

The requirement to include, in the initial notification, the amount of HAP used by existing sources in the 12 months preceding the notification, has been eliminated from the final rule to make

it consistent with the General Provisions and to decrease the reporting burden.

Facilities meeting the requirements of §63.820(a)(2) are required to submit annual HAP usage reports no later than 30 days after the end of the 12-month reporting period. Sources seeking to comply by means of this provision are required to determine HAP usage for each 12-month period (i.e., to make a determination each month and add it to the amount for the preceding 11 months). The EPA feels that 30 days is sufficient time to make this determination for the last month in the 12-month reporting period, do the summation, and submit the report. The General Provisions §63.9(i)(2) provide a means by which an owner or operator can request an extension.

Affected sources that do not use HAP may comply on a facility-wide basis under §63.825(b)(1). Recordkeeping (including records demonstrating that inks and other materials do not contain HAP) is essential to ensure compliance. Alternately, affected sources that do not use HAP may use the provisions of §63.820(b) to simplify recordkeeping and avoid all routine reporting.

The standard for wide-web flexography is equal to that for product and packaging rotogravure. Equal reporting requirements are necessary to ensure compliance with the standard. The reporting requirements specified in the General Provisions as well as the additional requirements proposed in this subpart have been reviewed in accordance with the Paperwork Reduction Act and an Office of Management and Budget control number has been issued. Sources using the provisions of the rule to establish area source status are subject to reporting requirements only in cases where the area source commitment is not met. The EPA feels that the reporting requirements in the final rule are the minimum necessary to ensure compliance with the standard. These reports alert the permitting authority to excess HAP emissions,

malfunctioning or improperly operated capture, control and monitoring equipment, and unapproved startup, shutdown, and malfunction procedures.

The purpose of the startup, shutdown, and malfunction plan is to ensure compliance with the standard. Documentation and reporting of deviations from the startup, shutdown, and malfunction plan is essential to allow the permitting authority to determine when violations of the standard may have occurred.

States may use the provisions of §112(l) of the CAA to obtain a partial or complete delegation of the Administrator's authorities under this standard.

2.11 LEVEL OF CONTROL FOR PRODUCT AND PACKAGING ROTOGRAVURE AND WIDE-WEB FLEXOGRAPHIC PRINTING AFFECTED SOURCES

Comment: Eight comments were received which support the level of control specified in the rule. Commenters IV-D-1, IV-D-36, IV-D-53, and IV-D-55 support the proposed standard. Commenter IV-D-4 stated that catalytic oxidizers can regularly obtain destruction rates of 99 percent and, thus, considered the standard appropriate. Commenter IV-D-7 stated that 95 percent overall control efficiency is achievable and that catalytic oxidizers can reach 98 percent destruction efficiency. Commenter IV-D-36 stated that catalytic oxidizers can obtain 98 percent and higher control device efficiency. Commenter IV-D-25 stated that 95 percent overall control efficiency is achievable and common.

Eight comments were received questioning the determination of the MACT floor. Three commenters (IV-D-15, IV-D-40, and IV-D-50) stated that the MACT calculation was biased because point (test) data were used rather than ranges of operating conditions. Commenter IV-D-50 stated that the database was adequate if the control equipment is required to pass a test at 95 percent but not consistently meet this standard.

Commenter IV-D-15 felt that the data base used was too small relative to the size of the industry. Commenter IV-D-61 stated that the MACT floor is not supportable for facilities with ancillary printing because the database used was not representative of this type of facility. Commenters IV-D-50 and IV-D-84 stated that it is inconsistent to regulate publication at 92 percent overall control efficiency and expect 95 percent from packaging rotogravure because the technologies are similar.

Commenter IV-D-38 stated that actual emissions rather than potential to emit were used to determine which sources were included in the MACT floor determination and that this biased the determination.

Commenter IV-D-4 stated that it is inappropriate to group flexography with rotogravure and that flexography should be a separate subcategory.

Commenter IV-D-82 stated that the database did not adequately represent the decorative foil segment of the rotogravure industry and that these facilities should be exempt from the standard.

Response: Many of the data upon which the MACT floor determination were based, were in fact, the most recent onetime test data available. These data are consistent with the final standard. Owners or operators choosing to comply through the use of control equipment may conduct an initial performance demonstration to establish the efficiency under test conditions. During the initial performance test, operating parameters are also established. The owner or operator must then maintain those operating parameters. The standard does not require owners or operators complying in this way to continuously demonstrate the control efficiency. They must, however, continuously monitor the operating parameters (typically oxidizer temperatures and a parameter indicating that the capture system is operating in an equivalent manner to its operation during the performance test).

Owners or operators may also comply through the use of continuous emission monitors, and where solvent recovery systems are used, through monthly liquid-liquid material balances.

The database contained a substantial proportion of sources which will be affected by the standard, and the EPA, in cooperation with industry associations, expanded it to the greatest extent possible. The database included lines which had both printing stations and coating stations. The control techniques for ancillary printing equipment and coating lines are the same as those for product and packaging rotogravure and wide-web flexographic presses. The final rule does provide owners or operators with the option of excluding ancillary printing equipment from the affected source. Such equipment, if excluded from this standard, will be subject to the appropriate source category standard when such a standard is issued.

The comparison between the standard for publication rotogravure and the standard for product and packaging rotogravure and wide-web flexography is not valid. Publication rotogravure sources must achieve a minimum of 92 percent overall efficiency each and every month. In order to meet this standard, average overall efficiencies are likely to be substantially higher. Product and packaging rotogravure and wide-web flexography sources are required to demonstrate 95 percent overall efficiency under test conditions, establish operating parameters during the test, and maintain those operating parameters. This is not, necessarily, equivalent to achieving 95 percent overall efficiency on a monthly average, each and every month. In both cases, the form of the final standard was consistent with the database used to develop that standard.

Actual emissions were not used to determine which sources were included in the MACT floor determination. Rather, potential emissions were estimated to make this determination. Wide-web flexography was grouped with product and package rotogravure

because many "hybrid" presses are in operation which include both rotogravure and flexographic print stations. If a separate subcategory had been established for flexography, the MACT floor, and thus, the standard, for this category would be identical to that established for the combination. The database contains numerous film and foil printers including sources in the roll leaf and decorative foil industries. Capture and control equipment available for use in the decorative foil industry is similar to that available to the product and package rotogravure industry in general.

2.12 LEVEL OF CONTROL FOR PUBLICATION ROTOGRAVURE AFFECTED SOURCES

Comment: Commenter IV-D-7 supported the proposed standard and stated that control devices can meet the 92 percent overall efficiency standard.

Commenter IV-D-37 requested that an explicit de minimis HAP content be established as a compliance alternative for operation without a control device. Commenter IV-D-38 requested that regulatory alternatives more stringent than the MACT floor be considered.

Response: The de minimis organic HAP content for publication rotogravure facilities operating without a control device is eight percent of the volatile matter used. If the inks used in a month contain less than 0.08 kg organic HAP per kg of volatile matter (including water), the facility would be in compliance without a control device. This has been clarified in §63.824(b)(3).

The EPA believes that, based on facility material balance data, the standard for existing publication rotogravure facilities, 92 percent overall control on a facility-wide basis to be achieved each and every month, will require an efficient capture system and a state-of-the-art control device. There is

no distinct identifiable technology available to new sources which would allow them to achieve a more stringent standard.

2.13 STANDARDS FOR PRODUCT AND PACKAGING ROTOGRAVURE AND WIDE-WEB FLEXOGRAPHIC PRINTING AFFECTED SOURCES

Comment: Seven commenters (IV-D-1, IV-D-15, IV-D-17, IV-D-36, IV-D-51, IV-D-53, and IV-D-63) suggested revising the standard to allow the use of control devices to meet the low-HAP/materials applied standard.

Four commenters (IV-D-1, IV-D-36, IV-D-53, and IV-D-63) noted an error in §63.825(f)(5) of the proposed rule where the words "material applied" should have appeared instead of "solids applied."

Three commenters requested clarification of §63.825(b)(1) and (2) to reflect that presses applying low HAP materials do not need control devices. Commenters IV-D-15 and IV-D-51 suggested addition of the word "and" between the sections. Commenter IV-D-63 suggested language clarifying that sources need only comply by one mechanism. Commenter IV-D-51 requested clarification that a combination of add-on control and reduced HAP materials will meet the standard, suggesting that the language in the proposed rule could be interpreted to allow this only for solvent recovery systems.

Commenter IV-D-53 requested clarification that organic HAP contents of materials are expressed "by weight."

Commenter IV-D-82 requested a 20 parts per million (ppm) control device exhaust limit as an alternative to 95 percent control.

Response: The standard has been revised to allow the use of control devices to meet the low-HAP/materials applied limitation. The revised standard has been clarified to enumerate the

different ways in which a source can comply and make it clear that only one means of compliance is necessary. The error in §63.825(f)(5) of the proposed regulation has been eliminated from the final regulation. The final regulation permits the use of control devices (not restricted to solvent recovery systems), as well as a combination of control devices (not restricted to solvent recovery systems) and low-HAP materials to comply.

The final regulation provides for compliance on an affected source-wide basis. Control devices are not required on presses applying low-HAP materials provided that the affected source achieves compliance by one of the mechanisms listed in §63.825.

The variables in the equations used to determine compliance are defined in §63.822. The units given in the definitions in both the proposed and final rule establish that the organic HAP contents of materials applied are expressed "by weight."

Affected sources may comply on the basis of HAP emitted/material applied, HAP emitted/solids applied, or HAP emitted relative to a calculated allowable mass emission level based on materials applied and solids applied, or overall control efficiency. Affected sources complying on the basis of overall control efficiency may demonstrate 95 percent control under "test conditions" and then maintain the appropriate control device operating parameters. Affected sources operating solvent recovery systems may demonstrate compliance through liquid-liquid material balances. The actual control device exhaust concentration would be of interest only for sources complying through the use of continuous emissions monitors across the control device. Compliance on the basis of 20 ppm exhaust gas concentration would be inconsistent with the database used to establish the standard, however, it is expected that such sources would be in compliance and could demonstrate compliance based on HAP emitted/material applied, HAP emitted/solids applied or calculated allowable HAP emissions.

2.14 COMPLIANCE FOR PUBLICATION ROTOGRAVURE AFFECTED SOURCES

Comment: Three comments were received on provisions for compliance by liquid-liquid mass balance. Commenters IV-D-38 and IV-D-49 requested clarifying the procedure for accounting for recovered mixtures of HAP and non-HAP volatile matter. Commenter IV-D-15 requested explicit acknowledgement that recovered solvent can be assumed to contain the same fraction of HAP as the volatile matter present in the ink.

Response: The final rule includes this provision in §63.824(b). In practice, the recovery efficiencies of organic HAP and non-HAP organic volatile matter are equivalent for the solvent blends used in the publication rotogravure industry. The recovered solvent is reused within the facility and the excess is sold back to the ink manufacturer for production of more ink. This is feasible because recovered solvent has the same composition as the solvent used to manufacture the ink.

2.15 MONITORING

Comment: Seven comments were received regarding the requirement to measure vent stream flow rates. Commenter IV-D-1 suggested allowing vent stream flow rate to be determined from fan amperage. Commenter IV-D-36 suggested allowing the use of fan indicators, fan rotation indicators, or press interlocks and allowing the system to be operated at different rates than those used for the performance test. Commenter IV-D-63 recommended allowing other devices, including press interlocks instead of flow meters. Commenter IV-D-84 suggested requiring only flow indicators and not press-by-press flow meters. Commenters IV-D-15 and IV-D-84 suggested allowing alternate devices for flow measurements when the physical layout does not permit placement of the flow meter as required in the proposed rule.

Commenter IV-D-53 suggested eliminating the requirement for flow rate monitoring because it has no relevance in the

converting industry. Commenter IV-D-51 stated that flow monitoring is useless, except for sources complying by means of continuous emissions monitoring.

Three comments were received concerning thermocouple requirements for monitoring oxidizers. Commenter IV-D-15 suggested eliminating the requirement for routine thermocouple calibration or replacement. Commenter IV-D-36 stated that thermocouples are difficult and expensive to calibrate and that the act of recalibration may increase the likelihood of system failure. Commenter IV-D-54 stated that the required thermocouple accuracies are unnecessarily strict and requested limits of two percent or ± 1 degree Celsius. Commenter IV-D-54 also suggested providing flexibility for the thermocouple location.

Three comments were received suggesting alternatives to continuous monitoring. Commenter IV-D-14 suggested allowing initial capture and control tests, weekly recording of materials usage, and monthly reduction to emission rates, as well as continuous temperature monitoring for oxidizers. No additional testing should be required unless the permitting authority thinks it is necessary. Commenter IV-D-25 suggested requiring control equipment tests every three years plus measurements of temperature rise (across catalytic oxidizers) and pressure differential, and eliminating burdensome three hour period temperature monitoring requirements. The commenter stated that most State and local EPA officials prefer this approach. Commenter IV-D-25 also suggested exempting sources with permanent total enclosures from monitoring with a requirement for a performance test every three years. Commenter IV-D-25 also recommended exempting sources with presses interlocked to control device operating parameters from testing and monitoring requirements. Commenter IV-D-36 suggested exempting sources complying by means of liquid-liquid mass balances from parameter monitoring requirements.

Commenter IV-D-15 suggested that the rule not specify performance criteria for solvent recovery system cumulative recovery measurement instrumentation, and that mass balance provisions require that water input be measured, but that only volatile organic matter (and not water) be recovered and measured.

Commenters IV-D-36 and IV-D-63 suggested eliminating startup, shutdown, setup, rewebbing and changeover periods from temperature monitoring requirements.

Commenters IV-D-36 and IV-D-63 requested guidance on the selection of the capture system parameter. Commenter IV-D-49 suggested requiring continuous monitors under §63.824(b)(1)(ii) of the proposed rule to assure that the capture efficiency is the same as the capture efficiency determined during the performance test.

Two comments were received regarding performance tests and the establishment of oxidizer operating parameters. Commenter IV-D-49 suggested conducting performance tests under both high load and low load conditions and suggested that required oxidizer operating parameters be established based on worst-case (i.e., shortest retention time and lowest temperature) conditions. Commenter IV-D-84 suggested requiring performance testing under normal, as opposed to maximum, conditions.

Commenter IV-D-82 stated that it would be more practical to require averaging of operating parameters over 24 hours (instead of three hours) because frequent short jobs and changeover periods would make it difficult to calculate averages over the applicable time periods.

Commenter IV-D-51 suggested that excursions in operating parameters should not be considered violations, but only trigger a potential request to re-test the control system from the permitting agency. Commenters IV-D-16 and IV-D-36 recommended more flexible monitoring requirements with exceedances triggering

a maintenance response as defined in a standard operating procedure. Excessive malfunctions could trigger a stack test request by the State.

Two comments were received concerning delegation of authority. Commenter IV-D-39 suggested delegating all monitoring approval to the permitting authority. Commenter IV-D-39 suggested delegating approval of operating parameters to the permitting authority.

Commenter IV-D-36 suggested that monitoring equipment accuracy not be specified in the rule but be held at manufacturers specified level and stated that auditing of continuous emission monitors would be difficult.

Commenters IV-D-36 and IV-D-53 suggested removing all monitoring requirements from the rule until the EPA formulates a new monitoring rule.

Response: The final regulation includes alternatives to the vent stream flow rate measurement requirement. Owners or operators of product and packaging rotogravure and wide-web flexographic presses with intermittently-controllable work stations may, as alternatives to measuring vent stream flow rate, install flow indicators on the bypass lines, secure bypass line valves with locking mechanisms or car seals, continuously monitor bypass valve position or equip the press with an interlock preventing operation when the control device is bypassed. These are acceptable alternatives to vent stream flow rate monitoring because they ensure that control devices are not bypassed. Sampling lines for gas analyzers and relief valves needed for safety purposes are not considered bypass lines for the purposes of these provisions. Presses that do not have any intermittently-controllable work stations are not subject to these provisions.

Accurate temperature monitoring is essential to ensure that oxidizers are routinely operated at the same efficiency as

demonstrated during the performance test. If temperature monitoring equipment is not calibrated periodically it is impossible to ensure continuous compliance with the standard. The final rule has been changed to clarify that all temperature monitoring equipment must be installed, calibrated, maintained, and operated according to manufacturers specifications; and that the chart recorder, data logger, or temperature indicator (rather than the thermocouple or temperature sensor) must be calibrated every three months. In the unlikely event that the type or layout of the control equipment makes it impossible to reliably calibrate the temperature monitoring equipment on a periodic basis, sources may comply through the installation of continuous emission monitors.

The final rule has been changed to require thermocouple accuracies of ± 1 degree Celsius or ± 1 percent of the temperature being monitored in degrees Celsius. In practice this provides for an accuracy of ± 2 to eight degrees Celsius which is well within the accuracy attainable using thermocouples with analog or digital chart recorders, voltmeters, or data loggers. The EPA considers that the requirement for locating thermocouples or temperature sensors "in the combustion chamber downstream of the combustion zone" or "at the nearest feasible point to the catalyst inlet," provides adequate flexibility.

Sources operating control devices must monitor an operating parameter or parameters to ensure that the control device is operating at the same or higher efficiency as that achieved during the initial compliance demonstration. As an alternative, continuous emission monitors may be installed across the control device and monitored to ensure compliance. In addition, sources operating control devices, except for those in permanent total enclosures, must monitor an operating parameter to ensure that capture efficiency is the same as, or higher than, the capture efficiency achieved during the compliance demonstration. These

requirements do not apply to sources operating solvent recovery systems and demonstrating compliance by means of monthly liquid-liquid material balances. The three hour averaging period for oxidizer temperature monitoring allows for transient temperature fluctuations which may occur due to press operating conditions. If temperatures are consistently maintained above the established operating parameter levels, then averaging is unnecessary because, if the temperature is always greater than the operating parameter, the average temperature will be greater than the operating parameter.

Monitoring temperature rise across the catalyst bed instead of the temperature upstream of the catalyst is not expected to provide any decrease in equipment cost or monitoring and recordkeeping labor. A source may seek approval of any alternate monitoring plan. The pressure differential across the catalyst bed may not be indicative of performance and may not ensure continuous compliance. Issues relating to catalytic oxidizer monitoring are discussed further in Section 2.22.

Sources with permanent total enclosures must maintain the conditions necessary for a permanent total enclosure. Such sources are still required to monitor parameters to ensure that the control device efficiency is equal to or greater than the efficiency established during the compliance demonstration test.

Presses interlocked to prevent operation when monitoring parameters are not maintained would meet a stricter standard than presses maintaining operating parameters on average for every three hour period, because if the parameters are always maintained, then clearly they are maintained on average. An owner or operator seeking to comply by interlocking the presses to prevent operation at any time when the parameters were not maintained could satisfy monitoring requirements simply by monitoring that the interlock system was in good working order and had not been overridden. Initial compliance testing would

still be required to establish the monitoring parameter levels which would ensure compliance. Sources complying by liquid-liquid material balances are exempt from parameter monitoring requirements.

The data on which liquid-liquid material balances are based must be accurate to ensure compliance with the standard. The performance criteria in the final rule are necessary to prevent generation of erroneous material recovery data. The language in the final rule has been revised to clarify the standard does not require instrumentation to be removed from service and shipped to the manufacturer for calibration and certification. It is necessary to measure all volatile matter, including water, to ensure the validity of the organic HAP recovery determination. Solvent recovery systems are rarely, if ever, used with waterborne ink systems. Water vapor, if present at significant levels in the dryer exhaust, could decrease the organic HAP recovery capacity of the sorbent. If water and water soluble organic matter are not measured, the composition of the recovered volatile matter cannot be determined.

Monitoring during periods of startup and shutdown must be addressed in the startup, shutdown, and malfunction plan for each affected source. It is appropriate to require temperature monitoring during periods of setup, rewetting, and changeover because of the potential for emissions during these periods.

Selection of the operating parameter to ensure the proper operation of the capture system depends on the conditions, equipment, and layout of each individual site. Under some circumstances relative pressure measurements, exhaust flow rate measurements, linear velocity measurement systems at pressroom intakes, fan amperage, or some combination of these parameters and/or other parameters might be appropriate. The selection of this parameter is part of the permit application process. Continuous emission monitors, along with a measurement of ink

usage could be used to ensure capture efficiency, however, the final rule does not require the use of continuous emission monitors because of costs associated with equipment installation, operation, calibration, and maintenance.

Consistent with the General Provisions, performance testing is to be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance (i.e., performance based on normal operating conditions) of the affected source. Since the final rule does not require owners or operators of catalytic oxidizers to monitor the temperature downstream of the catalyst, performance testing under multiple conditions will not be required for the purpose of establishing a representative downstream operating temperature.

A three hour averaging period has been retained in the final rule to allow for brief temperature variations which may occur when presses are switched on or off. A 24 hour averaging period for operating parameters may be too long to ensure continuous compliance with the standard, however, individual sources may get approval for alternative recordkeeping systems. The requirement to average parameters over a three hour period will not result in significantly greater recordkeeping labor than a requirement to average over 24 hours.

In order to ensure continuous compliance, operating parameters are established during the performance demonstration test. If continued operation were permitted during lengthy periods when operating parameters are not maintained, lengthy periods of excess emissions might result. Sources have the option of using continuous emission monitors as an alternative to monitoring operating parameters. Sources unable to conduct reliable audits of continuous emissions monitors, as required, may monitor operating parameters instead of operating continuous emission monitors.

The permitting authority must approve the selection of operating parameters. Owners or operators may request approval of an alternative monitoring method (and corresponding recordkeeping system) under §63.8(f) of the General Provisions.

The final rule contains specifications for the accuracy of thermocouples used to monitor control device efficiency and measurement equipment used to collect data for liquid-liquid material balances. Equipment meeting these specifications is readily available and has been in use for many years. Owners or operators choosing to demonstrate compliance by means of continuous emission monitors must select, install, operate, and maintain monitors which are capable of being audited to ensure compliance with the standard.

Monitoring is required to ensure continuous compliance with the rule. Owners or operators using capture systems and control devices would be unable to certify compliance with the standard without monitoring data.

2.16 COMPLIANCE DATES FOR NEW SOURCES

Comment: Seven comments were received concerning the triggering of new source compliance deadlines as a result of adding new equipment. Six comments (IV-D-15, IV-D-36, IV-D-51, IV-D-60, IV-D-63, and IV-D-84) involved the addition of new presses to common control systems. Commenters IV-D-15, IV-D-51, and IV-D-63 suggested that the addition of new presses to affected sources should not render the entire facility (publication) or group of commonly controlled presses (package and product) a new source. Commenters IV-D-36 and IV-D-84 stated that this would make it impossible to comply with "shelf life certification requirements." Commenters IV-D-36 and IV-D-60 stated that this would make it impossible to take advantage of the three year period to convert to low HAP materials.

Three commenters (IV-D-17, IV-D-36, and IV-D-63) felt that addition of a new station to a product and packaging press should

not render the entire press a new source and that the new station should comply separately as a new affected source.

Commenter IV-D-53 requested clarification of whether the addition of a new inline coating station or outboard deck makes the line a new source.

Response: The final rule provides that reconstructed sources must meet the compliance date established for new sources. Addition of one or more presses to an existing facility would not trigger the new source compliance date unless the additions were extensive enough to constitute a reconstruction. Addition of a new inline coating station or outboard deck to an existing facility would not trigger the new source compliance date unless the additions were extensive enough to constitute a reconstruction. Since the final rule considers the affected source for product and packaging rotogravure and wide-web flexographic printing facilities to be all of the presses located at the facility (subject to certain exclusions given in §63.821) addition of a single press to an existing facility, or addition of one or more stations to an existing press would not necessarily constitute a reconstruction of the facility. Furthermore, §63.826(c) excludes the costs associated with purchase and installation of air pollution control equipment from the determination of whether a facility has been reconstructed, consistent with the EPA's general policy regarding the cost of control equipment (59 FR 12421). Costs of modifying equipment to make it compatible with low HAP ink formulations that will be used to meet the requirements of this rule are also excluded from this determination.

2.17 COMPLIANCE DATES-GENERAL ISSUES

Comment: Commenter IV-D-39 suggested that the final compliance date should be 30 days after final action by the EPA on the Section 112(1) equivalency request, provided the request is submitted within one year of promulgation. This will avoid

the requirement for sources to comply with dual State/Federal regulations.

Commenter IV-D-82 requested a longer compliance deadline for facilities with oxidizers presently meeting reasonably available control technology (RACT) because costs will be very high to obtain only marginal emission reduction.

Response: The CAA requires existing sources to comply no later than three years after promulgation, regardless of RACT rules. Facilities with oxidizers may still take advantage of the compliance options in the rule, including the use of low-HAP materials. The final rule provides flexibility for owners or operators to comply through the use of control devices, through the use of low-HAP materials, or through a combination of these means.

The EPA determined that a three year compliance deadline for existing sources was appropriate based on the length of time required for sources complying through the use of upgraded capture and control equipment to design, gain approval for, contract for, retrofit, and test the additional equipment. A compliance deadline of 30 days after approval of a Section 112(l) request could be less than three years from promulgation and might be inadequate. Section 63.10(a)(5) of the General Provisions applies to this standard. This section provides that the dates by which periodic reports shall be submitted can be changed to be consistent with the State's schedule (without changing the frequency of reporting) by mutual agreement between the owner or operator and the State. Procedures governing the implementation of this provision are specified in §63.9(i) of the General Provisions.

New sources are required to comply on startup or on the date of promulgation, whichever is later. An operating permit could not be granted to a new source that was not capable of complying

during the period between promulgation or startup and the approval of a Section 112(1) program.

2.18 HAP CONTENT DETERMINATION

Comment: Ninety-six comments were received stating that they would prefer to use formulation data rather than Method 311 because the formulation data are more accurate and less burdensome. Commenter IV-D-4 requested that Method 311 be evaluated before becoming a requirement. Commenter IV-D-79 expressed concern about Method 311 and referred to comments submitted on the Wood Furniture standard.

Three commenters (IV-D-1, IV-D-6, and IV-D-63) recommended that manufacturers formulation data be accepted providing that all HAP in excess of 0.1 percent by weight are listed. Commenter IV-D-36 states that the provision in the proposed wood furniture standard, (i.e., formulation data with a one percent de minimis, 0.1 percent for Occupational Safety and Health Act carcinogens plus a demonstration that there is no release of HAP cure products) would be acceptable. Commenter IV-D-62 presented comparative analytical data from Method 311 analyses of furniture coatings containing some of the HAP of concern and found very poor interlaboratory reproducibility. They further stated that they were unable to recommend a suitable method and that the chemical industry had never been able to develop a suitable method. They suggested using formulation data and a 1/0.1 percent de minimis. Commenters IV-D-52 and IV-D-53 suggested a 1/0.1 percent de minimis. Three additional commenters (IV-D-15, IV-D-21, and IV-D-59) recommended a one percent de minimis.

Commenter IV-D-28 recommended establishing a de minimis level consistent with SARA 313 requirements. Four commenters (IV-D-25, IV-D-50, IV-D-51, and IV-D-82) suggested use of MSDS or other available information to avoid prohibitive analytical costs.

Three commenters (IV-D-1, IV-D-53, and IV-D-63) suggested changing the wording and requiring HAP content to be determined rather than identified. This would allow printers to rely on data from ink manufacturers.

Commenter IV-D-14 stated that Method 311 is likely to be acceptable and suggested the use of American Society for Testing and Materials (ASTM) D3432-80 for toluene diisocyanate, if necessary. Commenter IV-D-15 recommended using SW 846 methods (specifically direct injection capillary gas chromatography (GC) methods) instead of Method 311. Commenter IV-D-39 suggested the use of ASTM E260-91. Commenter IV-D-36 recommended changing Method 311 by modifying the quality assurance/quality control procedures to reflect the use of capillary columns, eliminating matrix spikes, eliminating chain of custody procedures for on-site analyses, and allowing alternatives to dimethylformamide. These changes were expected to save a large ink manufacturer an estimated \$70 million per year. Commenter IV-D-66 conducted Method 311 and found an 18 percent error with a known standard of butyl cellosolve and a 14 percent error with a known standard of methanol.

Commenter IV-D-6 manufactures 70-80 batches of ink per day and estimates a cost of \$500 per sample leading to a minimum annual cost of \$8.4 million. Commenter IV-D-17 estimated that a medium sized printer would spend \$750,000 per year doing Method 311 on 1000 formulas. Commenter IV-D-28 estimated annual costs of \$4.5 million annually for one plant and \$216 million annually company-wide. Commenter IV-D-21 estimated that a small ink manufacturer would incur costs of \$5 million to \$10 million per year plus a \$30,000 capital expenditure in conducting ink analyses. Commenter IV-D-33 estimated costs at \$2 million to \$3 million if they must analyze press ready inks which have been diluted only with non-HAP materials. Commenter IV-D-51 estimated ink analysis costs of up to \$7.5 million per year for a typical

printer. Commenter IV-D-52 stated that the failure to specify a de minimis penalizes analysts with sensitive equipment. Analytical costs for their ink company would be \$21-\$77 million for initial analysis.

Three commenters (IV-D-6, IV-D-21, and IV-D-59) stated that the requirement to conduct Method 311 would interfere with their typical short lead time order/delivery schedule.

Commenter IV-D-15 suggested including provision for a facility to concede that organic volatile material is 100 percent HAP and avoid the need for an analysis. Commenter IV-D-38 recommended that redetermination not be required when solvents are switched, if a worst case calculation demonstrates no increase in HAP content.

Commenter IV-D-39 recommended allowing State and local agencies flexibility to determine the appropriate analytical methods.

Response: The final regulation retains the use of Method 311, as modified and promulgated with the final rule for wood furniture coating. The Method allows the use of any analytical system employing GC provided that the prescribed quality control, calibration, and method performance requirements are met. The Method has been revised to include a simplified calibration procedure. The Method has also been revised to permit the use of recording integrators as alternatives to strip chart recorders, digital flow meters as an alternative to soap film meters, and the use of solvents other than dimethylformamide. Revisions made to Method 311 prior to the promulgation of Method 311 are consistent with the apparatus and methodologies suggested by the commenters.

The final regulation also permits printers to rely on formulation data provided that it meets certain requirements. Formulation data provided by suppliers of inks and other materials can be used if all organic HAP which is present at a

level of 0.1 weight-percent or greater in any raw material used in the formulation is accounted for. In the event of any inconsistency between the EPA Method 311 test data and a facility's formulation data, that is, if the EPA Method 311 test value is higher, the Method 311 test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

It should be noted that, for most organic HAP, the de minimis concentration for formulation data used for compliance with the final rule is lower than the de minimis concentration for MSDS. This lower de minimis is necessary because the compliance options for package and product rotogravure and wide-web flexographic printing include the use of materials which contain less than four weight-percent organic HAP. A de minimis of one percent organic HAP might not be stringent enough to ensure compliance under some materials averaging strategies, and could result in less stringent requirements for overall control device efficiency.

The final rule includes provisions by which owners or operators may determine the volatile matter content of materials and use this value in lieu of the organic HAP content for all compliance purposes. Owners or operators choosing to comply in this way would not be required to conduct Method 311 determinations.

2.19 METHOD 24/24A

Comment: Nine comments were received (IV-D-6, IV-D-15, IV-D-21, IV-D-28, IV-D-36, IV-D-51, IV-D-52, IV-D-53, and IV-D-63) requesting that formulation data be considered as an alternative to Methods 24 and 24A. Commenter IV-D-28 estimated costs of \$250 per sample leading to \$1.2 million for one plant and \$59 million company-wide. Commenter IV-D-36 estimated that formulation data with random verification by 24/24A would save

\$250-\$300 per sample. Commenter IV-D-52 estimated costs of \$3.5 to \$7 million if they cannot use formulation data instead of Method 24/24A.

Response: The final rule provides that printers may rely on the results of formulation data or Method 24/24A testing conducted by suppliers of ink and other materials. The owner or operator must adjust these data as required to account for the addition of dilution solvents at the printing facility. In the event of any inconsistency between the EPA Method 24 or 24A test data and a facility's formulation data, the test data shall govern, unless after consultation, an owner or operator demonstrates to the satisfaction of the enforcement authority that the formulation data are correct.

2.20 OXIDIZER TERMINOLOGY

Comment: Four commenters (IV-D-1, IV-D-36, IV-D-53, and IV-D-63) suggested using the term oxidizer instead of incinerator to distinguish vapor control devices from solid waste combustors.

Response: The final rule has adopted the term oxidizer for these control devices.

2.21 COMPLIANCE DEMONSTRATION-GENERAL ISSUES

Comment: Commenter IV-D-51 requested that §68.827(c)(2)(ii) of the proposed rule be rewritten to include flexographic presses which were inadvertently omitted.

Four commenters (IV-D-1, IV-D-36, IV-D-53, and IV-D-63) recommended allowing the use of existing test data in lieu of an initial compliance demonstration as compliance tests are very expensive and duplication of effort should be avoided. Commenter IV-D-36 requested explicit language that VOC control efficiency can be used in lieu of HAP control efficiency and that existing VOC test data can be used for initial compliance demonstration. This provision could save \$20,000-\$25,000 per test. Commenter IV-D-25 suggested applying VOC destruction test data to the HAP/VOC ratio from MSDS to determine HAP emissions.

Commenter IV-D-84 also requested explicit language that overall HAP control efficiency is equal to overall VOC control efficiency. Commenter IV-D-50 endorsed the assumption of HAP control efficiency equivalent to VOC control efficiency as determined by continuous emission monitoring for thermal oxidizer compliance.

Three commenters (IV-D-15, IV-D-40 and IV-D-53) requested clarifying §63.825(d) of the proposed rule to make it clear that a source need demonstrate compliance in only one of the three possible ways.

Commenter IV-D-54 requested clarification that only the calculations, recordkeeping, and reports applicable to the chosen compliance strategy are required.

Commenter IV-D-4 stated that three hour periods for averaging of operating parameter data may make compliance difficult. Commenter IV-D-81 recommended that not all exceedances be considered violations and that some number of exceedances per reporting period be allowed. Commenter IV-D-50 requests an allowance for monthly variance (comparable to the UST program) in calculation of HAP/solids ratio for compliance.

Commenter IV-D-15 recommended requiring compliance testing under conditions reasonably expected rather than maximum conditions.

Commenter IV-D-36 suggested eliminating non-volatile, non-emitted HAP such as MDI, TDI, and phthalates from the emission rate calculation.

Commenter IV-D-36 suggested allowing material-by-material compliance to achieve either low-HAP or low-solids status at different times on the same station.

Commenter IV-D-38 requested additional compliance provisions for sources that do not operate control devices and suggested that all references to total volatile matter should be changed to

total organic volatile matter or volatile matter less water to make the standards more stringent.

Response: The final rule has been rewritten to include wide-web flexographic presses along with product and packaging rotogravure presses. Wide-web flexographic presses were inadvertently excluded from this section of the proposed rule. The proposal preamble made clear that wide-web flexographic printing is regulated identically to product and package rotogravure printing. Provisions by which an owner or operator may request a waiver of a required performance test are given in §63.7(h) of the General Provisions. It should be understood that the initial performance test is used both to establish that the capture system/control device is capable of meeting the standard and to establish the values of operating parameters which must be monitored to ensure continuous compliance with the standard. Existing performance test data which does not clearly establish operating parameters for the capture system and the control device may not be suitable to establish compliance under the standard.

The performance test procedure in §63.827(d) provides for determination of organic volatile matter control efficiency. These data can be assumed to be equivalent to organic HAP control efficiency under most circumstances. Language has been added to the final rule to clarify this.

The final rule has been revised to clarify that compliance need be demonstrated under only one compliance option. Calculations, recordkeeping and reporting applicable to the compliance option chosen are required. As an example, calculations, recordkeeping and reporting to ensure control devices are operating properly are not required of owners or operators complying without the use of control devices. Similarly, owners or operators complying by means of solvent recovery systems are not required to keep records and submit

reports applicable to oxidizers. Owners or operators controlling emissions through the use of solvent recovery systems and complying by means of liquid-liquid material balances are not required to conduct capture tests or monitor capture parameters.

The rule requires continuous compliance. The EPA considers a three-hour averaging period sufficient to provide for transient conditions which might occur during changes in press operations. Longer averaging periods may allow operation with malfunctioning or improperly operated capture systems or control devices for extended periods of time. Periods longer than three hours might not ensure continuous compliance. Allowing one or more exceedances per reporting period, or allowing a monthly variance may not ensure continuous compliance with the standard. Owners or operators concerned that three-hour parameter averaging periods are insufficient to avoid false indications of non-compliance may choose to install and operate continuous emission monitors. Compliance with the low-HAP/solids or low-HAP/materials standards must be demonstrated each and every month. Allowance of a variance would not ensure compliance each and every month.

The General Provisions require performance test conditions to be based on "representative performance," that is, performance based on normal operating conditions. The final rule is consistent with the General Provisions. Owners or operators wishing to establish that part of the organic volatile material is not emitted may request approval of an alternate test method by the Administrator.

The final rule includes compliance options for product and packaging rotogravure and wide-web flexographic printing facilities that allow the use of either low-solids or low-HAP materials, or a combination of materials, each of which is either a low-solids or low-HAP material. In addition, an option has

been included in which allowable HAP emissions are calculated based on the amounts of both types of materials.

Total volatile matter includes water. This definition encourages the substitution of water for organic HAP and also encourages the substitution of non-HAP organics for organic HAP. Eliminating water from the definition of total volatile matter would discourage conversion to waterborne materials.

2.22 COMPLIANCE DEMONSTRATION FOR CATALYTIC OXIDIZERS

Comment: Nine commenters stated that outlet temperature is an inappropriate monitoring parameter for catalytic oxidizers. Comments IV-D-1 and IV-D-17 (same individual) stated that testing at maximum loading which would lead to a high downstream temperature which would be impossible to comply with under ordinary conditions. Commenter IV-D-16 stated that monitoring inlet and outlet temperatures does not indicate the activity of the catalyst and merely wastes natural gas. Commenter IV-D-16 recommended monitoring one temperature and requiring a quarterly performance test by testing upstream and downstream VOC concentrations as an alternative to upstream and downstream temperature measurements. Commenters IV-D-25, IV-D-36, IV-D-53, and IV-D-63 stated that temperature rise is not indicative of performance for catalytic oxidizers. Commenter IV-D-49 suggested monitoring inlet and outlet temperature but only maintaining the inlet temperature. The outlet temperature would be used to establish catalyst activity. Commenter IV-D-51 suggested monitoring only the exit temperature with a requirement for an annual catalyst test.

Commenter IV-D-81 suggested a 20 ppm exit concentration as an alternative to the 95 percent overall control requirement.

Response: The final rule requires the establishment of temperature upstream of the catalyst as an operating parameter to ensure compliance with the standard. The requirement for monitoring of downstream temperature was eliminated from the

final rule because failure to maintain this parameter during times of low volatile organic matter flow rate might lead to exceedances which incorrectly indicate a failure of the control device.

2.23 CAPTURE EFFICIENCY DETERMINATION

Comment: Four commenters (IV-D-1, IV-D-53, IV-D-54, and IV-D-84) recommended allowing a test protocol approved by the EPA in lieu of the procedure specified in §52.741.

Commenter IV-D-84 suggested allowing demonstration of capture efficiency by GC analysis every six minutes at the control device inlet and comparing integrated HAP capture to HAP use averaging over every one-month period in lieu of a onetime test. Analytical and flow rate data were provided as determined at six-minute intervals for a period of one month.

Response: The EPA has clarified the acceptable capture test procedures. Section 63.828(e) of the final rule specifies that the criteria for permanent total enclosures are to be confirmed in accordance with Procedure T in Appendix B to §52.741. In all other situations capture efficiency may be determined in accordance with §52.741(a)(4)(iii)(B).

The final rule also allows the use of alternate capture efficiency protocols and test methods which satisfy the criteria of either the Data Quality Objective or the Lower Confidence Limit approaches as described in Appendix A of the final rule.

The Procedures T, L, G.1, G.2, F.1 and F.2 in §52.741 of Part 52 were proposed in the Federal Register on August 2, 1995 (60 FR 39297) for addition to 40 CFR 51, Appendix M, as Method 204 through Method 204E. (See Docket Item IV-I-3.) Methods 204 through 204E correspond to Procedures T, L, G.1, G.2, F.1, and F.2 respectively. There are some differences between the test methods proposed on August 2, 1995 and the procedures in §52.741 of Part 52. A new method, Method 204F, was also included

in the August 2, 1995 proposal. The changes and the new method are summarized below.

First, Section 1.4, Sampling requirements, of procedures L, G.1, G.2, F.1, and F.2 contains a requirement that the sampling time for each temporary total enclosure (TTE) and building enclosure (BE) test run should be at least eight hours, unless otherwise approved. This provision has been revised in the proposed Methods 204A through 204E to specify that each TTE or BE run shall cover at least one complete production cycle and must be at least three hours long. The sampling time for each run need not exceed eight hours, even if the production cycle has not been completed. The maximum allowable time for a test run is 24 hours. Alternative sampling times would be subject to EPA approval.

Second, a new section on audit sample procedures has been added to the proposed Method 204A, VOC Input.

Third, the directions for analysis audits have been expanded (newly added for Method 204A) to include information on audit sample availability and reporting directions for audit results.

Next, Method 204, Criteria for and Verification of a Permanent or Temporary Total Enclosure, and Method 204E, VOC Emissions in Fugitive Stream from Building Enclosures, clarify the acceptability criteria of a BE and clarify which openings in a building constitute an exhaust point or a natural draft opening.

Finally, a new method, Method 204F (called the distillation approach), has been added for measuring liquid VOC input, as an alternative to Method 204A.

Although the Procedures L, G.1, G.2, F.1, and F.2 in §52.741 of Part 52; and the Methods 204A through 204F proposed for addition to 40 CFR 51, Appendix M were developed for TTE and BE testing, the same procedures and methods can also be used in an alternative capture efficiency protocol. For example, a

traditional liquid/gas mass balance capture efficiency protocol could employ Procedure L, proposed Method 204A or proposed Method 204F to measure liquid VOC input and Procedure G.1, or proposed Method 204B to measure captured VOC.

Additional guidance on capture efficiency testing procedures is available in the document "Guidelines for Determining Capture Efficiency" (Docket Item II-B-3). The proposed Methods 204 and 204A through 204F are discussed in this document.

In addition, other test methods may be used subject to approval in accordance with the General Provisions, §63.7(f).

2.24 STARTUP/SHUTDOWN ISSUES

Comment: Commenter IV-D-1 recommended that data collected during startup and shutdown be disregarded in determining continuous compliance. Commenter IV-D-36 stated that there are no emissions expected during startup or shutdown, therefore, only malfunctions should be addressed and that recordkeeping should only be required of planned shutdowns of control devices and malfunctions of control devices.

Response: The required startup, shutdown and malfunction plan must address procedures to be followed during startup, shutdown, and periods of malfunctioning capture or control systems. In cases where the procedures followed are consistent with those given in the startup, shutdown, and malfunction plan, no reporting is necessary. The EPA does not agree that there are no emissions associated with periods of startup and shutdown. As an example, there is a risk of residual organic HAP in ink fountains and ductwork escaping directly to the atmosphere or through the control device during the periods when the control device is being shut down.

Startup, shutdown, or malfunction of a press or presses need not be considered as a startup, shutdown, or malfunction of the affected source if the capture system and control device continues to function properly. The requirements pertaining to

startup, shutdown, and malfunction plans and reports do not apply to affected sources which do not use control devices.

2.25 RECORDKEEPING

Comment: Commenter IV-D-4 suggested that recordkeeping requirements should be reduced for flexographers so that the cost of recordkeeping is not out of line with the actual benefits.

Commenter IV-D-25 recommended annual accounting rather than 12-month rolling averages as this will afford greater flexibility for seasonal variations. Commenter IV-D-25 expects that local EPA officials will require all of the recordkeeping applicable to major sources, even if the facility does not exceed the major source threshold.

Commenter IV-D-36 suggested clarifying that specific recordkeeping requirements are applicable to the control strategy employed and all facilities are not required to do all recordkeeping. Commenter IV-D-36 also requested inclusion of a provision for recordkeeping under a State-approved operating permit which would eliminate the required materials inventory. Commenter IV-D-88 suggested delegating recordkeeping requirement approval to the permitting authority.

Two comments were received concerning record retention. Commenter IV-D-39 recommended that records should be retained for two years or until the next inspection, whichever is longer. Commenter IV-D-79 recommended requiring records to be maintained for five years or until six months after a compliance audit or inspection.

Commenter IV-D-79 suggested that HAP usage recordkeeping should not be required until two years after promulgation.

Commenter IV-D-81 suggested eliminating recordkeeping requirements for startup, shutdown, and malfunction events except when the plan was not followed and excess emissions occurred as a result. Commenter IV-D-81 recommended that if a source was within the defined operating range for a 24 hour period, then no

records other than a notation of "no excursions" should be required. Commenter IV-D-81 also suggested allowing manual recordkeeping and permitting readings to be made every four hours for devices which normally operate at steady state.

Response: Recordkeeping requirements for wide-web flexographic printing sources are equivalent to those for product and packaging rotogravure sources or sources that operate both types of equipment. While flexographic printing, in general, uses less organic HAP than rotogravure printing, the organic HAP emitted from flexography are no less hazardous and no more difficult to account for than an equivalent amount of organic HAP emissions from rotogravure.

Sources taking advantage of the simplified requirements in §63.820(a)(2) or §63.821(b) must keep monthly records to establish eligibility for these provisions. Recordkeeping on an annual basis might permit violations to exist for as long as eleven months.

The States have the authority to require additional recordkeeping if they believe it is necessary. The final regulation prescribes the minimum recordkeeping requirements that the EPA believes are necessary to ensure that sources are complying with the rule. If recordkeeping requirements to satisfy State permits include all recordkeeping needed to comply with the final rule, these records will be adequate. The final rule makes it clear that a source is responsible for only those recordkeeping requirements applicable to the compliance option selected by the source. Additional notes have been added to Table 1, clarifying the applicable General Provisions.

Section 63.20(b) of the General Provisions requires facilities to maintain all records, including all reports and notifications, for at least five years. The requirement that records be retained for five years is based on the statute of limitations imposed on the EPA in the CAA and is consistent with

the requirement in other rules, such as the Operating Permits Rule--Part 70 of Title 40 of the Code of Federal Regulations.

The final rule has been revised to eliminate the requirement for existing sources to provide HAP usage data for the 12 months prior to the Initial Notification. This is not required by the General Provisions. By initial notification, sources will alert the permitting authority that they are major sources, or that they are using the provisions of the rule to establish area source status. The information required by the General Provisions is sufficient.

The General Provisions, §63.10(b)(v) requires that all information necessary to demonstrate compliance with the startup, shutdown, and malfunction plan be maintained. This information may be recorded using a checklist, or some other effective form of recordkeeping, in order to minimize the recordkeeping burden for conforming events.

Records of operating parameter values (e.g., charts or printouts) must be maintained to demonstrate compliance. The EPA has determined that three hours is an appropriate averaging period for operating parameter averaging which will allow for brief transients when equipment is started up or shutdown. Devices that normally operate at steady state may not operate at steady state during periods of malfunction.

2.26 PRINTING/COATING ISSUES

Comment: Two comments were received with regard to small amounts of printing conducted on coating lines. Commenter IV-D-16 requested exemptions for sources regulated as coil coaters and paper and other web coaters that do small amounts of printing. They recommend exempting printing operations that do not exceed major source thresholds and present a health risk of less than 1×10^{-6} . These operations would be covered under the appropriate NESHAP when it is developed. Commenter IV-D-61 requested exemption of facilities with small

amounts of printing conducted on coating lines because the database on which the standard was developed did not include this type of facility. Commenter IV-D-61 recommended following California South Coast Air Quality Management Division (SCAQMD) Rules 1128 and 1130.

Commenter IV-D-80 recommended a specific exemption for paper machines and off-line and stand-alone coaters. Commenter IV-D-80 also requested an exemption for hybrid lines that sometimes print and sometimes coat, or alternately, an exemption for coating operations conducted on hybrid lines.

Commenter IV-D-53 requested clarification of whether printing conducted on coating lines is covered by the standard. Commenters IV-D-36 and IV-D-53 requested clarification of whether flexo printing on a coating line is included.

Commenter IV-D-51 suggested that off-line coaters using a common solvent recovery system should be covered at the discretion of the facility and that in-line coaters that use dissimilar solvents should not be covered unless connected to a common control system with printing stations.

Commenter IV-D-4 stated that it is inappropriate to regulate in-line coating under the printing standard.

Response: The final standard permits the owner or operator of a product and packaging rotogravure or wide-web flexographic printing affected source to choose to exclude ancillary printing equipment from the affected source. This equipment is used primarily for coating, laminating, or other operations besides product and packaging rotogravure and wide-web flexographic printing. Presses on which five weight-percent or less of the total material applied each month is applied by rotogravure or wide-web flexographic print stations would be subject only to a simplified recordkeeping requirement. The EPA believes it is appropriate to provide the owner or operator with the option not to subject these presses to the HAP emission

limitations for product and packaging and wide-web flexographic printing in §63.825 because the work being done on the rotogravure and wide-web flexographic print stations on these presses is ancillary to the work being done on other work stations (i.e., coating stations) on these presses. The EPA is separately establishing MACT for other source categories, such as the paper and other web coating source category and the metal coil coating source category, which may be more appropriate for this type of equipment. Ancillary printing equipment, if excluded from this standard, will be subject to the appropriate source category standard when such a standard is issued. Coil coaters, paper and other web coaters, and paper machines may use this option and comply with the appropriate NESHAP for their source category when promulgated.

The EPA considers that exclusions based on health risk are inappropriate for a technology based standard.

California SCAQMD Rules 1128 and 1130 provide that coating is exempted from other rules (e.g., printing rules). Inclusion of a provision of this type in the final rule is not appropriate because a MACT standard for coating has not yet been promulgated. Provisions have been added to the final rule to exempt incidental printing operations on coating equipment from all requirements except simplified recordkeeping provisions.

The standard applies equally to product and packaging rotogravure and wide-web flexographic printing. Printing conducted on coating lines is covered by the standard, although many of these lines may be eligible for the exclusions described above. Off-line and stand-alone coaters, on which rotogravure or wide-web flexographic printing operations are not conducted, are not covered by the standard (except in some circumstances when this equipment is eligible for inclusion at the owner or operator's option). Coating operations conducted in-line with rotogravure and wide-web flexographic printing operations are

covered by the standard because of the difficulty in distinguishing capture and control efficiencies applicable to printing operations from those pertaining to coating operations. These operations are covered to prevent situations where the same equipment is subject to more than one standard.

2.27 STANDARD FOR LITHO AND HEATSET PRINTING

Comment: Commenter IV-D-14 has experience that petroleum distillate oil used in litho and heatset inks may contain up to 20 percent HAP and requests that these processes be regulated.

Response: Lithographic and letterpress inks are formulated with petroleum and vegetable oils which have a minimum boiling point substantially higher than that of any of the organic HAP present in petroleum oils (such as benzene, toluene, xylene, ethylbenzene, or hexane), and thus contain little or no HAP. The commenter's experience is not typical.

2.28 UNITS

Comment: Four commenters requested changes to the way the materials are accounted for with regard to the low-HAP threshold. Commenter IV-D-14 stated that pounds HAP per gallon of material is preferable to kg HAP per kg solids because that is the way that the printing industry buys and measures ink. Also, weight units (lb) are preferable to mass (kg) because correction for gravitational constants are eliminated. Commenter IV-D-37 requested a standard in "grams per liter of material less water and exempt compounds" to make this consistent with State standards and avoid the difficulty of complying with two sets of standards. Commenter IV-D-39 requested a standard in pounds per gallon of material, grams per liter of material and percent by volume, in addition to kg HAP per kg solids and kg HAP per kg material as proposed. Commenter IV-D-79 requested mass/volume units instead of mass/mass units in expressing the low-solids standard.

Commenter IV-D-15 suggested eliminating units from the mass ratios and replacing the constant coefficient in Equation 13 of the proposed rule (for performance testing) with a generic coefficient to adjust for different combinations of units which may be used.

Commenter IV-D-4 requested the use of English units as printers are familiar with them.

Response: The inclusion of standards based on mass per volume (pounds per gallon, grams per liter, etc.) units would have the effect of discouraging the use of high solids ink formulations, and encouraging the use of additional dilution solvents. The use of additional dilution solvents might increase organic HAP usage and is likely to increase energy requirements.

This standard limits emissions of HAP. Existing State standards defining "compliant materials" in terms of mass per volume or mass per volume less water control emissions of VOC which is a much broader category than organic HAP.

Material compositions specified in kg per kg are equivalent to those specified in pound per pound. Sources may use either set of units for material compositions. The equation given for control device efficiency testing is consistent with the variables as defined in §63.822. Sources conducting performance tests may use the appropriate conversion factors to calculate the coefficient which is consistent with their test data.

2.29 GLYCOL ETHERS

Comment: Commenters IV-D-36 and IV-D-63 requested explicit definition of glycol ether HAP by CAS number rather than the structural definition in the CAA.

Response: The definition in the CAA provides explicit guidance as to whether or not a particular compound is a HAP. In theory, many chemical compounds could fit within this definition. Only a limited number of these compounds are presently in use in the printing industry, however, a relaxation of the standard

resulting from explicit designation of these compounds might encourage a shift to other compounds which are HAP as defined in the CAA. Propylene glycol ethers, butylene glycol ethers, and pentylene glycol ethers are not HAP, because they do not fit the description in §112(b) of the CAA.

2.30 SUMMARY TABLE IN REGULATION

Comment: Commenter IV-D-15 recommended eliminating the Summary Table (Table 1) or adding a disclaimer that it is not intended as a substitute for the rule, to avoid misinterpretation of the abbreviated provisions.

Response: Table 1 of the proposed rule has been eliminated from the final rule.

2.31 GENERAL PROVISIONS CROSS REFERENCE TABLE

Comment: Three commenters requested additional clarifications to the General Provisions cross reference table. Commenter IV-D-15 recommended noting that not all provisions are applicable to every affected source and including notes exempting sources with Part 70 permits from requirements in §63.5 for Federal approval.

Commenters IV-D-36 and IV-D-53 requested clarifying notes in additional table entries indicating that COMS are not required. Commenter IV-D-53 requested eliminating startup and shutdown from the startup, shutdown, malfunction plan and just requiring a malfunction plan because emissions are zero or negligible during startup and shutdown.

Response: The applicability of the General Provisions is summarized in Table 1 of the final regulation. Additional clarifying notes have been added to clarify that continuous opacity monitoring systems are not required. Explicit requirements for monitoring, performance testing, reporting and recordkeeping which are applicable to particular compliance strategies are given in the regulation.

Sources with Part 70 permits must comply with §63.5 by obtaining the approval from the permitting authority. A startup, shutdown, and malfunction plan is required of all sources operating control devices. The EPA believes that there is a potential for HAP emissions during the startup and shutdown of capture systems and control devices.

2.32 VALIDITY OF COST ANALYSIS

Comment: Five comments were received regarding the accuracy of the cost analysis. Commenter IV-D-16 stated that the cost analysis is invalid because it did not include coil coaters that do incidental printing. Commenter IV-D-36 stated that the costs presented are underestimated because facilities with potential to emit will have to conduct costly Method 311 analyses to demonstrate area source status. Commenter IV-D-51 stated that costs have been underestimated due to failure to consider the costs of enhanced monitoring and the costs of accounting to confirm area source status. Commenter IV-D-53 stated that the costs and the number of affected facilities have been underestimated. Commenter IV-D-40 stated that costs have been underestimated by at least an order of magnitude.

Response: Costs presented in the proposal preamble and BID were estimates based on the best information available to the EPA. The accuracy is limited by uncertainty regarding the number of facilities which will establish area source status in accordance with the mechanism provided in the final rule or other available mechanisms, as well as uncertainty regarding the particular compliance strategy which will be adopted by affected sources.

The final rule includes a provision in §63.821(a)(2)(ii) by which coil coaters that conduct incidental printing operations can be excluded from the affected source. Owners or operators of such equipment are subject only to simplified recordkeeping

requirements to establish that they meet the criteria for exclusion.

The final rule includes alternatives to Method 311 analyses. Facilities may establish area source status on the basis of accurate formulation data obtained from their materials suppliers.

2.33 INTERCHANGEABILITY OF INK SYSTEMS

Comment: Two comments were received regarding the interchangeability of solvent and waterborne inks. Commenter IV-D-36 stated that solvent and waterborne inks may be interchangeable on some press stations. Commenter IV-D-50 stated that much of the existing equipment in many facilities is incompatible with waterborne materials.

Response: The extent of interchangeability of ink systems varies depending on printing technology, equipment, and substrate. In general, rotogravure cylinders for solvent based and waterborne applications are not interchangeable. Some presses lack adequate drying capacity to operate with waterborne materials.

2.34 STATE AIR TOXICS PROGRAMS

Comment: Two comments were received on the relationship between State and Federal Air Toxics Programs. Commenter IV-D-36 requested either elimination of, or a moratorium on, State Air Toxics Programs to eliminate redundancy. Commenter IV-D-63 prefers State risk-based air toxics programs and recommended the EPA work with States to develop combined non-duplicative regulations.

Response: Section 112(d)(7) of the CAA provides that MACT standards shall not be interpreted to replace standards issued under State authority.

2.35 ALTERNATE TEST METHODS

Comment: Commenters IV-D-39 and IV-D-54 requested that approval for alternate test methods be delegated to the States.

Response: The specification of test procedure is an integral component of the emission standard. Allowing States to approve different test methods might have the effect of implementing standards which are less stringent than the MACT floor.

2.36 WORK PRACTICE STANDARDS

Comment: Commenters IV-D-39 and IV-D-79 request inclusion of work practice standards such as keeping ink and clean-up material container lids closed when not in use.

Response: The EPA does not have sufficient information to include this requirement. Individual permitting authorities may require work practice standards as a condition in operating permits where appropriate.

2.37 INNOVATIVE TECHNOLOGIES

Comment: Commenter IV-D-40 requested provisions for using innovative technologies such as biological treatment and allowing for delayed compliance if the innovative technologies do not succeed.

Response: The standard allows three years for existing sources to comply. Provisions for requesting an extension of compliance are given in the General Provisions, §63.7(i).

2.38 DUE PROCESS

Comment: Commenter IV-D-61 stated that sources conducting incidental printing operations will not have the opportunity to comment on the proposal because they will not know that they are covered, particularly since the regulatory text is not published. Commenter IV-D-81 stated that the EPA must print the proposed regulation and cites difficulty with conversion of bulletin board versions of the regulation to Microsoft WORD or WordPerfect 6.1.

Response: The preamble stated that "The proposed rule addresses facilities which apply ink and other materials to any substrate, except fabric, using rotogravure or wide-web

flexographic methods." This definition encompasses all facilities affected by the regulation.

The proposed regulatory text was available for public inspection and copying in the Air and Radiation Docket at the time of proposal. In addition, printed copies were available by written or telephone request to the Air and Radiation Docket. The EPA considers that the 75-day period allowed for public comments included sufficient time for commenters who were unable to make use of the electronic version of the regulatory text to obtain a printed copy.

2.39 EXEMPTION FOR NEWLY LISTED HAP

Comment: Commenter IV-D-80 stated that the rule should not apply to new solvents added to the HAP list after proposal of the standard.

Response: The EPA believes that the standards in §§63.824-825 apply to those organic HAP listed pursuant to §112(b) of the CAA as of the date of proposal (and not subsequently deleted). The suitability of the available capture and control technologies considered in determining MACT would be evaluated before extending the standard to newly listed HAP.

2.40 FEASIBILITY OF MATERIALS SUBSTITUTION

Comment: Commenter IV-D-4 stated that glycols on the HAP list can be easily replaced with non-HAP materials.

Response: The ease of replacement of glycols and glycol ethers on the HAP list is expected to vary depending on the printing technology, substrate, and performance requirements of the printed material. The final regulation provides a significant incentive to encourage pollution prevention through replacement of HAP with non-HAP materials.